
HARBOR COUNTRY HIKE & BIKE PLAN

In memory of Larry Frankle



Friends of Harbor Country Trails

January 2010



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Berrien County Drain Commission

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PART ONE: THE REPORT

INTRODUCTION

Many segments of the population are adversely affected by health consequences due to physical inactivity. These daily lifestyle habits have also spilled over into our vacation and recreational habits. Local governments can play a valuable role in changing this trend by providing facilities that support a healthy lifestyle and improved quality of life for all residents and visitors regardless of age and socioeconomic status.

Over the past 50 years, the focus of planning and design has been in favor of the automobile. The extent of these practices is most evident in the suburbs and they have also started to encroach on resort and vacation communities. Visitors to resort and vacation communities expect convenience and easy access to their favorite vacation spots. They are often required to choose the automobile for trips less than a mile over non-motorized forms of transportation because the majority of infrastructure in place has been designed around the automobile. Twenty-five percent of all trips made in the United States are less than one mile in length, and 75% of those short trips are made by automobile. Furthermore, our population is becoming less active and more obese. Sixty-four percent of the U.S. population is critically overweight. A lack of physical activity is thought to be a significant contributor to being overweight. Communities can no longer afford to ignore the importance of providing accommodations for pedestrians, bicyclists and those seeking recreation opportunities.

National trends demonstrate poor pedestrian planning in communities around the country. Harbor Country is not exempt from these same trends. As the demand for non-motorized transportation has increased, Harbor Country has realized the shortfalls in their own system. The consequences are most apparent in the summer when many pedestrians and bicyclists are using the streets and roadways for recreational purposes.

Harbor Country has recognized that it has a responsibility to develop a non-motorized transportation plan to provide a blueprint for the development of safe and efficient pedestrian facilities primarily due to the efforts of Larry Frankle who created the Friends of Harbor Country Trails 501C3 organization to begin this visionary process.

Harbor Country has a tremendous opportunity to develop an extensive non-motorized transportation network that will improve the quality of life in this area for both visitors and residents. When individuals and families make decisions about where they want to live and recreate, the availability of trails and other recreational facilities become important in their decision making process.

Over the past 10 years, Harbor Country has seen high growth rates along the Lake Michigan shoreline. New Buffalo has experienced the highest growth rate of 10% since 2000. In contrast to this growth, Three Oaks has experienced a 5% decline in population since 2000. The increase in growth along the lakeshore has created an increase in automobile traffic and the demand for non-motorized transportation is apparent. Increased numbers of pedestrians and bicyclists (Apple Cider Century) are found in this area using the existing roadways, especially on Lakeshore Drive. While the population trends in Three Oaks have declined over the past 10 years, recent interest in the wine industry and agri-tourism has created an increase in visitors to Three Oaks.

Creating safe places for people to walk and bicycle is critical in developing a successful community and for providing an opportunity for people to become more active. There are many modes of non-motorized transportation. A sidewalk system is functional and provides walking routes within neighborhoods or business districts, but it does not safely accommodate bicyclists. They often also neglect the experience of the user. The bikeway or bike lane places bicyclists within the roadway and provides a safe way for bicyclists to connect to the local road network and places outside their immediate community. Bikeways and bike lanes neglect the pedestrian and are typically not the most scenic routes as they are located immediately adjacent to automobile traffic. A shared use path accommodates both pedestrian and bicycles. It allows users to travel outside the road right-of-way on a more scenic route. Shared use paths are not always feasible in more populated areas and urban settings.

The Harbor Country Hike & Bike Plan, here after referred to as the “Hike & Bike Plan,” focuses on creating a network of sidewalks, shared use paths, bikeways and bike lanes that will link neighborhood communities, business districts, schools and parks. The main purpose of the plan is to provide a common vision and encourage coordination between agencies for future planning efforts.

STUDY AREA

The Hike & Bike Plan study area is located in the southwest corner of the State of Michigan. The Study Area consists of the Townships of New Buffalo, Chikaming and Three Oaks as well as the City of New Buffalo, the Village of Three Oaks, the Village of Grand Beach and the Village of Michiana, forming a geographic triangle. The area extends from Browntown Road to the north, Lake Michigan to the west, the state line to the south and a combination of Avery and Carpenter Roads to the east. The entire population in this area is estimated to be about 10,400 according to www.city-data.com.

The area has a rich history dating back to the Native American tribes of Miami and Potawatomi. The 1800’s brought the lumber industry to the region and tourists began arriving in the late 19th century. Since World War II, growth has been slow but steady until the last 20 years, when many Chicago area residents began buying second homes along the lakeshore. Due to the influx of seasonal homeowners and annual visitors, the summer population nearly doubles. In addition, the construction of the “Four Winds Casino” and an increased public interest in wineries and fresh organic products have led to a growth in the tourist economy in the region.

METHODS

During the inventory stage, data was gathered from a number of sources. These include, but are not limited to, the Southwest Michigan Regional Planning Commission (SWMPC), Berrien County, Chikaming Township, the Michigan Department of Transportation (MDOT) and Three Oaks Township. Other sources included online aerial photography, site visits and photographic analysis.

Steering Committee

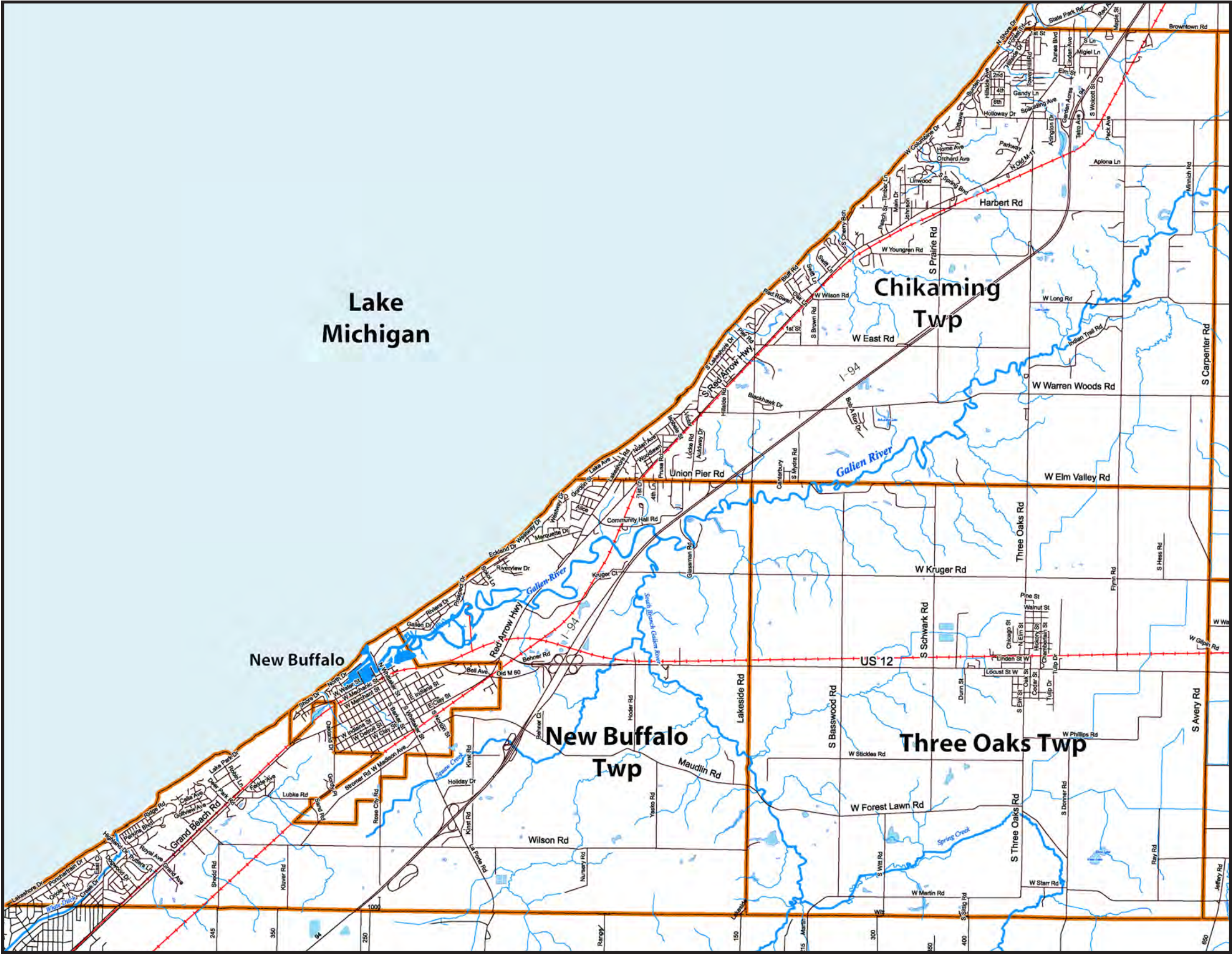
During the planning process, a variety of methods were used to gain public input. One method was the creation of a Steering Committee made up of representatives from each jurisdiction located in the study area, regional officials and staff from local planning organizations. They acted as a sounding board throughout the planning process providing suggestions and insight from user and regulatory perspectives. They also helped to identify local destinations, user groups, existing problem areas and feasibility for potential routes. Individual meetings with Steering Committee members were held to gain other perspectives on the project. These individuals provided map information, background materials and local history that helped to formulate the Hike & Bike Plan.

Public Input Meetings

A series of open houses and meetings were held to gain input from the general public. These open houses were well attended and provided confirmation of many of the proposed routes and pointed out needs in other areas that otherwise might not have been identified.

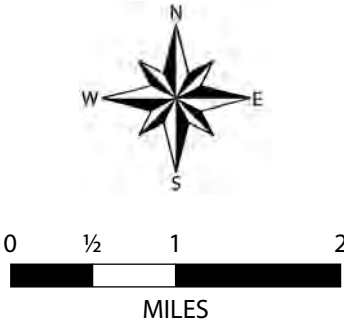
Informal Survey

An additional meeting was also held with area students to gather insight on how they would use a non-motorized transportation system. Accompanying the public meetings and student meetings was a survey that provided us with additional information. The students also prepared other supplementary exhibits that proved useful and can be found in the “Part 2: Supplemental Information” section of this report.



LEGEND

-  Township Boundary
-  Roads
-  Railroads
-  Lakes
-  Rivers



Source: Southwest Michigan Planning Commission

Local Governments

Upon completion of the report, each governmental agency located within the study area had a chance to review the report and provide feedback. It is the intent of this report to be adopted by each governmental agency in order to apply for grants and bring the Hike & Bike Plan closer to implementation.

PURPOSE

The purpose of the Hike & Bike Plan is to develop a comprehensive plan that provides non-motorized transportation opportunities throughout the Harbor Country Area. The Hike & Bike Plan identifies specific routes and types of routes that will be implemented over time. The intent of the routes is to allow residents and visitors, regardless of physical or socioeconomic differences, to have the opportunity to use the system for transportation, recreation, enrichment and leisure. The Hike & Bike Plan was developed by studying all areas of Harbor Country including public and private lands. A concerted effort was placed on identifying “on road” and “off road” opportunities that provide continuous routes between parks, schools, neighborhoods and business districts.

The Hike & Bike Plan has also taken into account connections to communities located outside the study area including Michigan City, St. Joseph/Benton Harbor and Niles. The importance of these connections allow Harbor Country’s planning efforts to be included within a regional plan which will increase the viability of such a system. The Regional Trail Connections Map shows how Harbor Country can establish connections to these surrounding communities.

The Hike & Bike Plan was developed to visually document the approximate location of specific routes. It will be used to guide overall decisions for each local governmental agency in their efforts when obtaining easements and grants, making route connections, and defining locations for building trails within their limits. This plan provides tools and recommendations for coordination in future planning between each governmental body and the Friends of Harbor Country Trails.

With limited financial resources, the implementation of this plan may take as long as 30 years or more. To help illustrate a strategy for implementation, a Hike & Bike Priority Plan, which will here after be referred to as the Priority Plan recommends which routes should be completed first to provide the most vital connections.

As a result of developing and adopting the Hike & Bike Plan, each governmental agency involved will have a document to help them secure State and Federal funding. This allows each jurisdiction to leverage local funds and grants through match money (10-50%) and to receive grants for implementing the non-motorized transportation infrastructure. It is recommended that the Friends of Harbor Country Trails also aid in obtaining grants and soliciting match money.

GOALS & OBJECTIVES

1. Enhance the quality of life for residents and the quality of experience for non-residents and visitors through the development of a non-motorized transportation system.
 - The new routes will allow people to use non-motorized transportation for short trips instead of the automobile.
 - The non-motorized transportation system is a recreational activity that can be enjoyed by all user groups.
 - Non-motorized transportation provides health benefits by encouraging exercise.

-
2. Encourage a variety of users by providing destination and travel opportunities regardless of socioeconomics, physical abilities and personal interests.
 - Provide access for walkers, runners, bicycles, roller blading, skateboarding and potentially cross-country skiing.
 - Provide routes to destinations including businesses, schools, parks, beaches and residential communities.
 - Provide connections to tourist destinations including farms, orchards, wineries and cultural centers.
 - Provide routes which enhance the travel experience through aesthetic and scenic appeal.
 - Provide recreational tourist destinations with a safe, high quality trail system.
 3. Promote safety and sustainability throughout the non-motorized transportation system by using up-to-date National, State and local standards.
 - Design aspects of the non-motorized transportation plan to be in compliance with the American with Disabilities Act (ADA) for accessibility.
 - Design all aspects of the Non-motorized Transportation Plan to be in compliance with the American Association of State Highway and Transportation Officials (AASHTO) standards.
 - Incorporate environmentally friendly or “green” design where applicable in compliance with current Leadership in Energy and Environmental Design (LEED) standards.
 4. Establish points of connection with adjacent communities where non-motorized trails either exist or are planned.
 - Work in conjunction with the Southwest Michigan Planning Commission and other local and regional planning efforts to develop an overall trail network to connect many communities in the southwest Michigan region.
 5. Develop a series of continuous primary routes running north/south and east/west with an emphasis on a route along the Lake Michigan shoreline.
 - The primary emphasis along Lake Michigan is placed because this is where most of the population and visitors are located.
 - A north/south and east/west link is important in providing links to Sawyer, the Village of Three Oaks, Niles, Warren Woods and Four Winds Casino.
 6. Continue community involvement by utilizing a public input process during the design and construction of various segments of the Hike & Bike Plan.
 - The Friends of Harbor Country Trails and each local governmental agency involved shall promote public hearings prior to the implementation of segments by attending and supporting the plan when appropriate.
 7. Pursue appropriate funding sources to implement a non-motorized transportation system.
 - The Friends of Harbor Country Trails and each local governmental agency involved shall promote local dollars be leveraged for grants when possible from Federal, State and private funding agencies.
 8. Acquire public and private lands and easements to allow for the implementation of the Hike & Bike Plan.
 - The Friends of Harbor Country Trails and each local governmental agency involved shall encourage public and private easements or land acquisitions for implementation of specific routes of the non-motorized transportation system.
 9. Utilize the Hike & Bike Plan as a tool for comprehensive land use planning.
 - A tool for local government to use during the review process for new development within the system area and to consider the implication of non-motorized transportation in all future developments.

10. Designate the Friends of Harbor Country Trails as an advocate group.

- Support local jurisdiction efforts in implementing specific trail segments.
- Help local governments coordinate education and marketing efforts.
- Work with townships, cities, county and State to establish maintenance plans and maintenance responsibility for segments of the trail system.

11. Encourage the integration of many modes of transportation to create complete streets that provide for both vehicular and non-motorized transportation.

EXISTING CONDITIONS

Most of Harbor Country has a rural character. The majority of the population resides along the Lake Michigan shoreline between the Lake and Interstate 94. This area is made up of permanent residences, second homes and a variety of shops and businesses making a resort town/vacation atmosphere. The majority of visitors and second homeowners in the area come from the southwest Michigan and the Chicago region. The area east of Interstate 94 includes natural areas near the waterways, working farms, the Village of Three Oaks and hamlets like Sawyer. The study area triangle is anchored by the Village of Three Oaks to the southeast, the City of New Buffalo to the southwest and Warren Dunes State Park to the north. Several parks exist in this area including two State Parks, eight beaches and three preserves six of which directly border the Galien River from Chikaming Township to Lake Michigan in the City of New Buffalo. Privately owned open space includes several four golf courses and four camp grounds. When it comes to transportation, four options are available in Harbor Country.

Automobile

The first mode of transportation is the automobile. Automobile traffic is well established due to a series of well connected roadways. The main roadways in the study area are Red Arrow Highway and Interstate 94 running northeast/southwest along the lakeshore and US-12, which runs east/west. Red Arrow Highway is a four-lane highway running parallel to I-94 and is where the majority of businesses are located that cater to the vacationer. It is also an alternate route for I-94 when lanes are closed for either emergencies or construction. Interstate 94 is a six lane divided highway running parallel to Red Arrow Highway and includes three exits within the study area. US-12 is a four lane highway that connects Red Arrow Highway to the Village of Three Oaks and the City of New Buffalo.

Bicycle

A second mode of transportation is bicycling. While safety is a growing concern among bikers in the area due to increased traffic volumes and deteriorating road conditions, most bicyclists in this area use the “Backroads Bikeway System.” It provides signed, shared roadway routes on existing roads designed for the automobile with an average daily trips (ADT) count of less than 2,000 vehicles. The conditions along these routes range from unpaved shoulders with no separation between the vehicle lane and the bicyclist to ten-foot wide paved shoulders. These routes are identified in loops starting and ending at the Village of Three Oaks based on the desired distance. The most heavily used road for bicycle travel is Lakeshore Drive/Marquette/Riviera, which runs parallel to Red Arrow Highway along the Lake Michigan shoreline. Over 3,000 bicyclists use these routes in the Fall during an annual recreational event called the Apple Cider Century, which is headquartered in the Village of Three Oaks.

Pedestrian

A third mode of transportation is pedestrian travel, which is limited due to a lack of sidewalks in the populated areas or high traffic volumes on roads. Many pedestrians use the roadways to walk. Sidewalks are located along Whittaker Street in the City of New Buffalo and Elm Street in the Village of Three Oaks. A disjointed network exists along Red Arrow Highway, in residential areas and in front of schools. Most of the residential streets do not have sidewalks along the roadways. The most heavily used roads for pedestrian travel is Lakeshore Drive/Marquette/Riviera; Whittaker Street, which runs from Red Arrow/Buffalo Street to Lake Michigan, or Townline Road, which also runs from Red Arrow Highway to Lake Michigan.

Railroad

A fourth mode of transportation in this area is the Amtrak Railroad. There are six daily trains, three traveling west and three traveling east. The new stop in downtown New Buffalo opened recently and may increase non-motorized traffic due to interest in rail travel between Chicago and Harbor Country.

USER GROUPS

During the first two Steering Committee meetings, the group identified future users of the Hike and Bike Plan as follows:

Hikers	Families	Agri-Tourists
Bicyclists	Joggers	Senior Citizens
Commuters	Vacationers	Students

CONCEPT PLAN

The Concept Plan was developed after the first two Steering Committee meetings. Main destinations were established and the primary routes between these destinations were determined.

The Steering Committee identified three main destinations: the City of New Buffalo, the Village of Three Oaks, and Warren Dunes State Park. The Steering Committee also identified the population centers where the primary users would be originating from. These areas are highlighted in yellow on the concept map and include New Buffalo, Harbert, Sawyer, Lakeside, Union Pier, Three Oaks, Grand Beach and Michiana.

A triangular pattern formed the primary traffic flow. Destination points along these routes were defined to be popular public places and/or places where a trailhead could be constructed. Included are Warren Dunes State Park, Chikaming Elementary, Harbert Park, Warren Woods State Park, River Valley High School/Middle School, Chikaming Township Park & Preserve, Galien River County Park, Memorial Park, New Buffalo City Beach, New Buffalo Elementary, Oselka Park, New Buffalo High School/ Middle School, Watkins Park and Three Oaks Elementary.

CONCEPTUAL ROUTE MAP

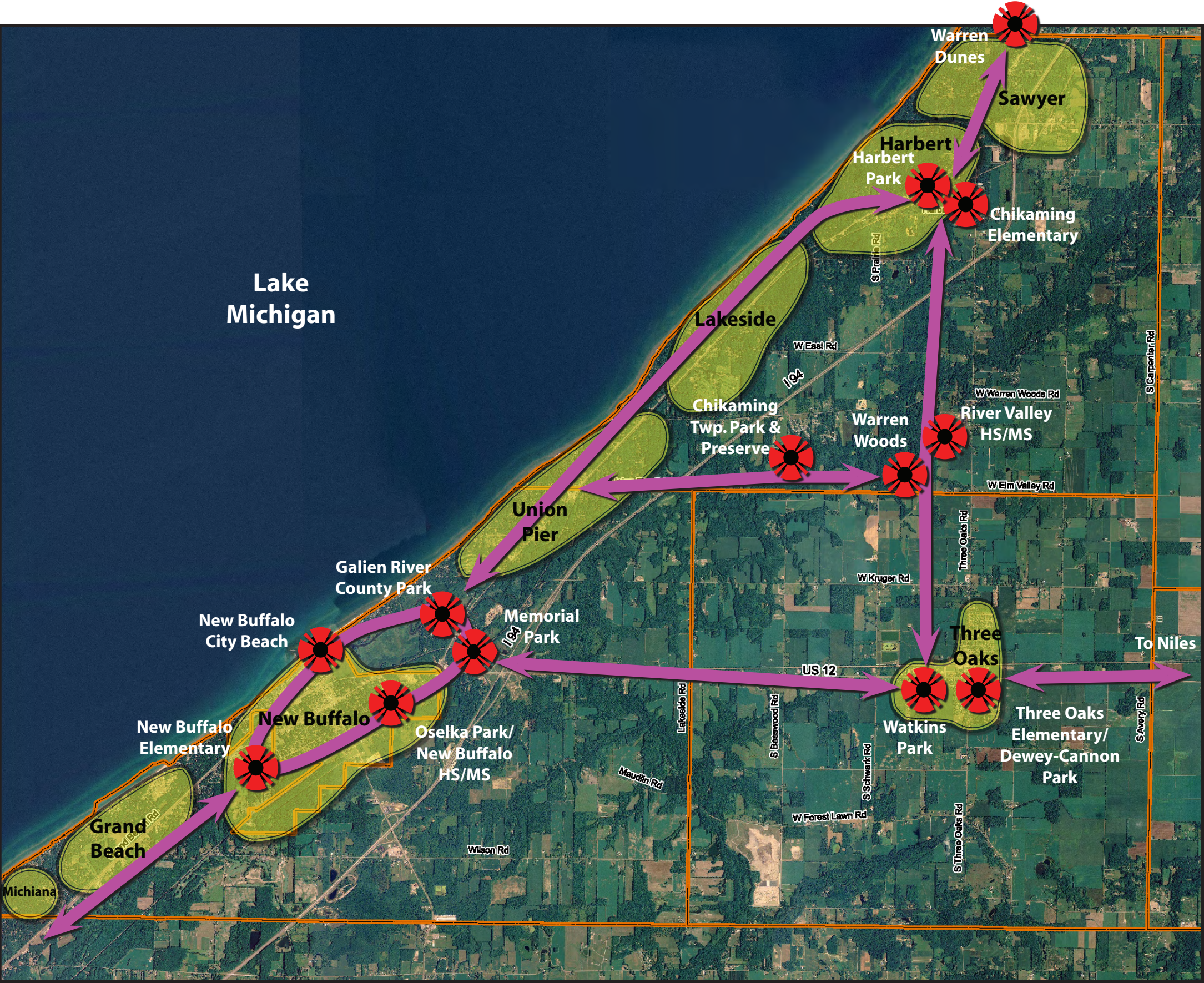
Immediately after developing the Concept Plan, an Early Route Map was developed before an extensive analysis of each route was performed. This map was developed to generate discussion and act as a starting point for further route analysis and alternate route development. This map shows three different options:

1. An off-road shared use path plan which takes routes through private properties along the Galien River and through existing farmland and connects several possible destinations.
2. A combination plan consisting of both routes through private properties and within road rights-of-way utilizing portions of Lakeshore Drive and Red Arrow Highway.
3. A route within the rights-of-way of roads offering direct access between possible destinations.

REGIONAL PLANS

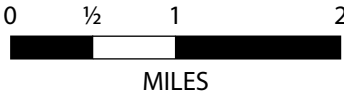
The Regional Plans Map shows how the Hike & Bike Plan can become an integral part of a greater regional trail network and national network. The main three nodes of the “triangle” or destinations for the Hike & Bike Plan are labelled with yellow asterisks.

CONCEPT PLAN MAP



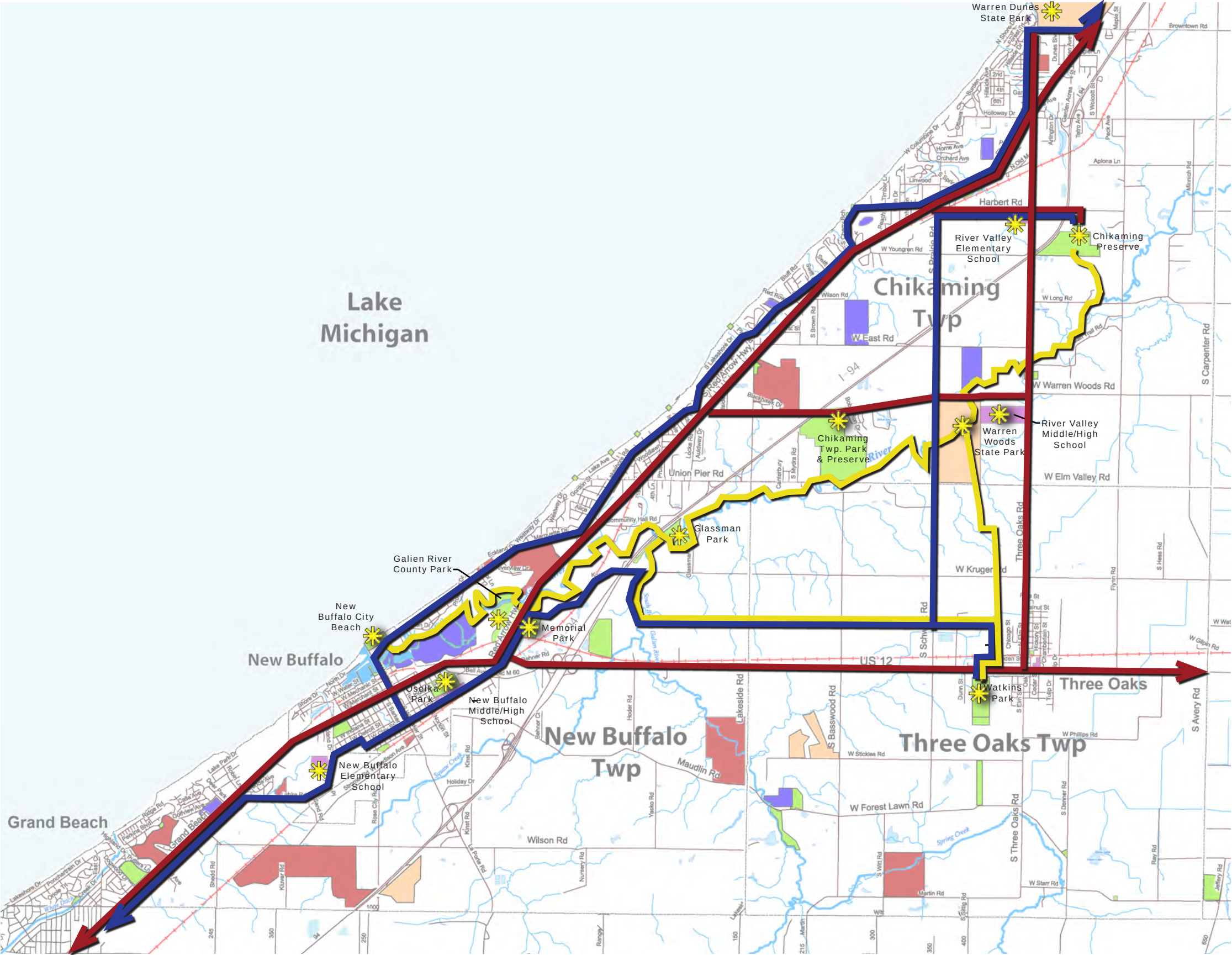
LEGEND

-  Township Boundary
-  Population Center
-  Destination
-  Primary Non-Motorized Route



Source: Michigan Geographic Data Library

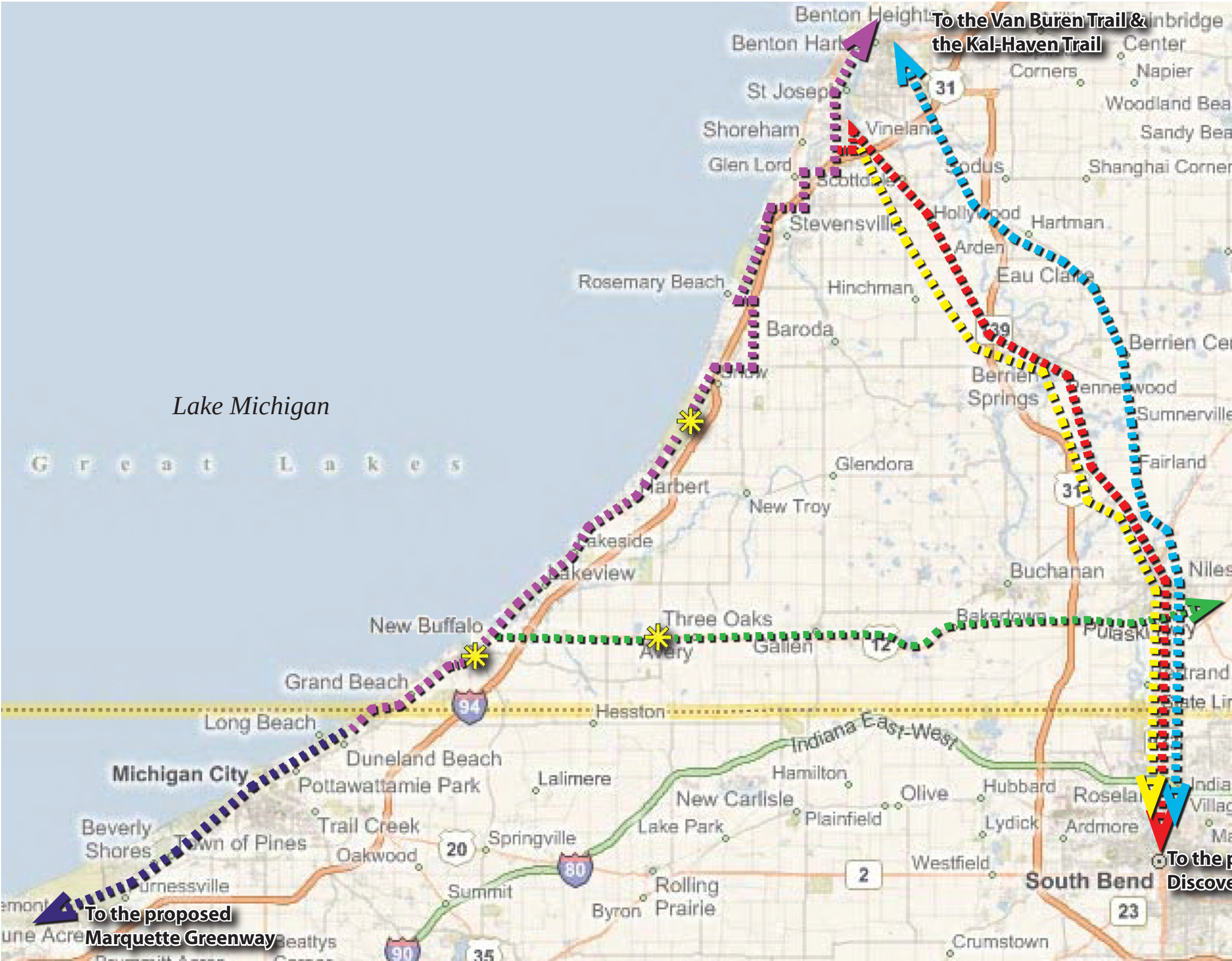
CONCEPTUAL ROUTE MAP



LEGEND

- Township Boundary
- State Land
- Township/Local Land
- Private Land
- Public Schools
- NGO Conservation Land
- Trail Head
- Off-road on Private Lands
- Combination: Off-road on Private Lands or Within Road Rights-of-Way
- Within Road Rights-of-Way





LEGEND

- Red Arrow/ Lakeshore Corridor
(Harbor Country 1999, MDOT 2001, Michiana Charette 2005)
- US-12 Corridor
(MDOT 2001, Michiana Charette 2005)
- Indiana Existing or Funded Trail
(NIRPC)
- Old US 31
Proposed Blossomland Trail
(Berrien County)
- Abandoned Rail Line
Proposed Blossomland Trail
(Berrien County)
- American Electric Utility Corridor
Proposed Blossomland Trail
(Berrien County)

The most important role of the Hike & Bike Plan for the regional trail network is the lakeshore route between the Indiana-Michigan border and Benton Harbor/St. Joseph. This route has been studied by numerous organizations over the years. Plans are underway in Indiana to connect to Michigan along US-12 following the Lake Michigan shoreline as part of the Marquette Greenway. Also included in this greenway plan is a water trail along the Lake Michigan shoreline which is forecast to extend into Michigan. Non-motorized transportation planning efforts in St. Joseph are also underway to connect south and north of the city along the shoreline.

Harbor Country's planning efforts between Warren Dunes State Park and the Indiana-Michigan border will emphasize this route's importance in regional planning efforts to connect these two cities. The American Cycling Association has identified a north-south route through Michigan as part of the North Lakes Route. It is recommended that the lakeshore route from Indiana through Benton Harbor/St. Joseph including the route through Harbor Country be incorporated as part of this national route.

The other important link identified on this map is an east-west connection between the City of New Buffalo and Niles along US-12. Planning efforts by MDOT have identified this route as a possible non-motorized transportation route. Harbor Country's planning efforts and identification of this route between Three Oaks and New Buffalo will reinforce MDOT's planning efforts.

DEFINITION OF TERMS

1. SIDEWALK

- That portion of a street between the curb line or the lateral line of a roadway and the adjacent property line or easements of private property that is paved or improved and intended for use by pedestrians. (Manual on Uniform Traffic Control Devices (MUTCD), 1A-13)
- A paved area 5' - 6' wide
- Installed by developers or the municipality in which the roadway resides.
- Located in residential neighborhoods or along main roads and business parks.
- A 6' wide sidewalk is preferred to allow more adequate room for two-way traffic on sidewalks.

2. BIKEWAY

- A generic term for any road, street, path or way that in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other modes of transportation. (AASHTO)

3. BIKE LANE/ PAVED SHOULDER

- A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists. (AASHTO)
- 4' minimum width, 5' width on roads with speeds of 50 mph or greater.
- Striping designates separation between vehicles and bicyclists

4. RIGHT-OF-WAY

- A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted for transportation purposes. (AASHTO)

5. HIGHWAY

- A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way. (AASHTO)



 **TRAIL HEAD**



 **BLOCK CROSSING**



 **PEDESTRIAN BRIDGE OVERPASS**



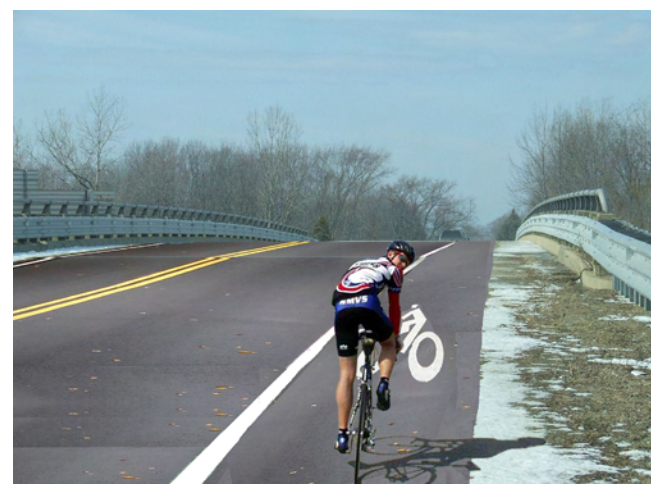
 **SHARED ROAD**



 **BIKE LANES
& SHARED USE PATH**



 **SHARED USE PATH**



 **BIKE LANES/ PAVED SHOULDER**



 **BIKE LANES & SIDEWALKS**



 **WATER COURSE**

6. SHARED ROAD

- A roadway which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes or a road with paved shoulders. (AASHTO)
- A roadway which is open to bicycle, pedestrian and motor vehicle travel utilizing an existing roadway street with appropriate signage and a speed limit of 25 mph.

7. SHARED USE PATH

- A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. (AASHTO)
- Normally a paved area 8' to 12' wide with a 2' wide unobstructed area adjacent to both sides of the path
- Side slopes should not exceed 33% and running grades shall not exceed 5% with graduated scale up to 11% or more for short distances.
- Separation from roadways should be a minimum of 4' and vertical clearance should be a minimum of 8'.
- Shared-use path users may include: bicyclists, rollerbladers, wheelchair users, walkers, runners, baby strollers and people walking dogs.
- Path-Roadway intersections (Block Crossings/ Mid-Block Crossings) should be carefully designed (See AASHTO Guide for the Development for Bicycle Facilities)

8. LANE CONVERSION

- The restriping of an existing four lane road into (2) vehicle lanes, a center turn lane and (2) bike lanes or bikeways adjacent to the curb
- Could be implemented utilizing the existing road, road resurfacing or new road construction projects
- Lane conversions are relatively inexpensive and effective method of traffic management vs. reconstruction
- Typically slows traffic by 5 mph or more

9. MID-BLOCK CROSSING

- A crossing point positioned between intersections or within a block rather than at a road intersection.
- Can help supplement the number of crossings needed in an area.
- Preferred in some situations so the pedestrian is not required to travel additional distances to the next intersection for crossing and so the pedestrian is not conflicting with vehicular traffic at intersections.
- Designed to fit the specific situation. Many design forms include a pedestrian activated light, pedestrian refuge island with crosswalk striping and warning signage.
- Further study by the road commission, city, or village is required prior to any implementation.

10. ROUND-A-BOUT

- A circular intersection with yield control of all entering traffic, channelized approaches and appropriate geometric curvature such that travel speeds on the circular roadway are typically less than 30 mph.
- Eliminates the need for traffic lights and signals.
- Road Commission has jurisdiction over installation and maintenance.
- Bicyclists are directed off bikeways and bike lanes to the sidewalks through round-a-bouts for safety.

11. TRAIL HEAD

- A point of entrance and exit to a hike and bike pathway or route.
- Trail heads often include a parking lot, restroom facilities, area maps/info kiosk, and often is incorporated into a public park or public access facility.

12. BLOCK CROSSING

- A non-motorized path crossing located at the intersection of two roads designated for vehicular use.
- Designed to fit the specific crossing situation. Many design forms include a pedestrian activated light, pedestrian refuge island with crosswalk striping and warning signage.

13. PEDESTRIAN BRIDGE OVERPASS

- A bridge specifically designed for non-motorized transportation use that crosses over a road or highway.
- Provides a crossing for non-motorized users without interaction or interruption from motorized vehicles.

PRELIMINARY PLAN

The preliminary plan was developed after a third meeting with the Steering Committee, individual meetings with Steering Committee members, analysis of survey data collected from students and senior citizens and field research.

DATA ANALYSIS

Steering Committee

The Steering Committee and individual members identified three routes that are obviously the most direct routes between the three points forming the triangular non-motorized system. These included Three Oaks Road, Red Arrow Highway and US-12. They also identified several alternative routes to accomplish these same connections. These routes include Lakeshore/Marquette/Riviera, Maudlin-Forest Lawn Road, Wilson Road, Union Pier Road, Townline Road, Lakeside Road, Lubke Road, Kruger Road, Clay Street and the Galien River as a water course.

Students

The high school and middle school students surveyed, identified main destinations to be the New Buffalo City Beach, Warren Woods State Park, Warren Dunes and the New Buffalo Skate Park. Out of 241 students polled, 239 students indicated that they biked or walked to work or school, with the majority of these students bicycling. Students also indicated that more sidewalks and repair of existing sidewalks were needed in the City of New Buffalo and that something has to be done on the congested roads to accommodate non-motorized transportation including more crosswalks. Specific routes identified by the students included a route near the Lake Michigan shoreline, Wilson Road, Maudlin Road, a path through Warren Woods State Park, Forest Beach Road, Clay Street, Lubke Road, Kruger Road, Bell Avenue, Red Arrow Highway, US-12, the Galien River, Community Hall Road, Townline Road, Union Pier Road, Grand Beach Road and Whittaker Street.

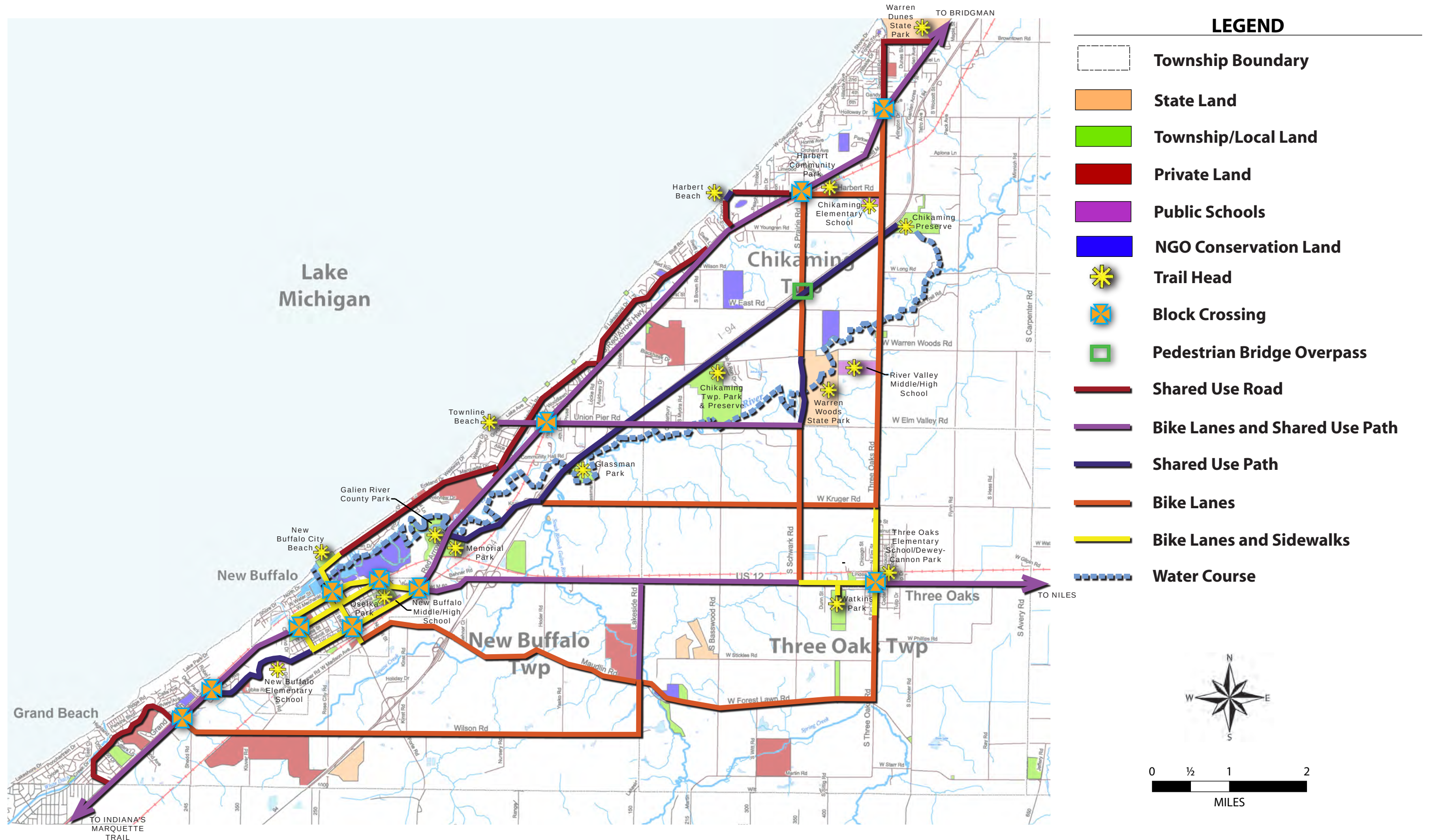
Senior Citizens

The senior citizens surveyed identified Red Arrow Highway to be a primary location for bike lanes. They also identified the current sidewalk systems to be inadequate. More sidewalks are needed and the current sidewalks need to be repaired. Other seniors identified walking on the roads to be dangerous at times due to automobile traffic moving at high speeds.

Field Research

Field research consisted of observing pedestrians and bicyclists and researching utility corridors or abandoned rights-of-way which were found to be nonexistent. This forced the study to concentrate on existing road rights-of-way, public land or acquisition of private lands.

PRELIMINARY PLAN MAP



ROUTES

Based on the data collected and analyzed above a Preliminary Plan was developed suggesting several routes.

Lakeshore Routes

The Lakeshore/ Marquette/ Riviera route is identified as a shared use road with minor improvements including recommended signage and pavement markings to provide a safe travel environment for all users. This route acts as an alternate route from Red Arrow Highway; which is the main route equipped with bike lanes for commuters, and a shared use path for pedestrians and other user groups. Through these two routes, several smaller 1/2 mile to 1 mile loops are created to accommodate the recreational user groups and provide access to the system from the residential neighborhoods along the lakeshore. In higher density areas, namely Three Oaks and New Buffalo, routes were identified through these areas which would take the form of bike lanes and sidewalks.

East-West Routes

The east-west routes include a main route along US-12 in the form of bike lanes and a shared-use path. Alternate routes include Kruger Road and Maudlin-Forest Lawn Road, which are less traveled roads that can be improved by adding bike lanes for safe non-motorized use. Other east-west routes include Wilson Road for users traveling from Grand Beach and Michiana; Townline Road/ Union Pier Road to connect Townline Beach, Chikaming Township Park and Preserve and Warren Woods State Park; Harbert Road to connect Chikaming Elementary School with Harbert Beach and Red Arrow Highway; and, Browntown Road to connect Warren Dunes State Park to destinations east of the study area.

North-South Routes

North-south routes include Three Oaks Road and Schwark/Prairie Road. Three Oaks Road is currently utilized by the Backroads Bikeway system and is the most direct route to the Village of Three Oaks from the north. However, paved shoulders or bike lanes are not currently present. Improvements to this road include adding bike lanes. An alternative route is Schwark/Prairie Road, which is discontinuous and unpaved in areas. Improvements to this route include a pedestrian bridge across I-94, a shared use path through Warren Woods State Park, the addition of bike lanes and the paving of Prairie Road.

Other Routes

Other routes identified by the Steering Committee include a water course along the Lake Michigan shoreline from the Indiana border north to Warren Dunes State Park and a water course on the Galien River that would connect area parks with non-motorized boating opportunities. An overland route to connect these parks is identified on the plan as a shared-use path within the I-94 Right-of Way and provides an alternative to the original idea of a route adjacent to the Galien River. Approval from MDOT will need to be obtained to implement this portion of the Hike & Bike Plan.

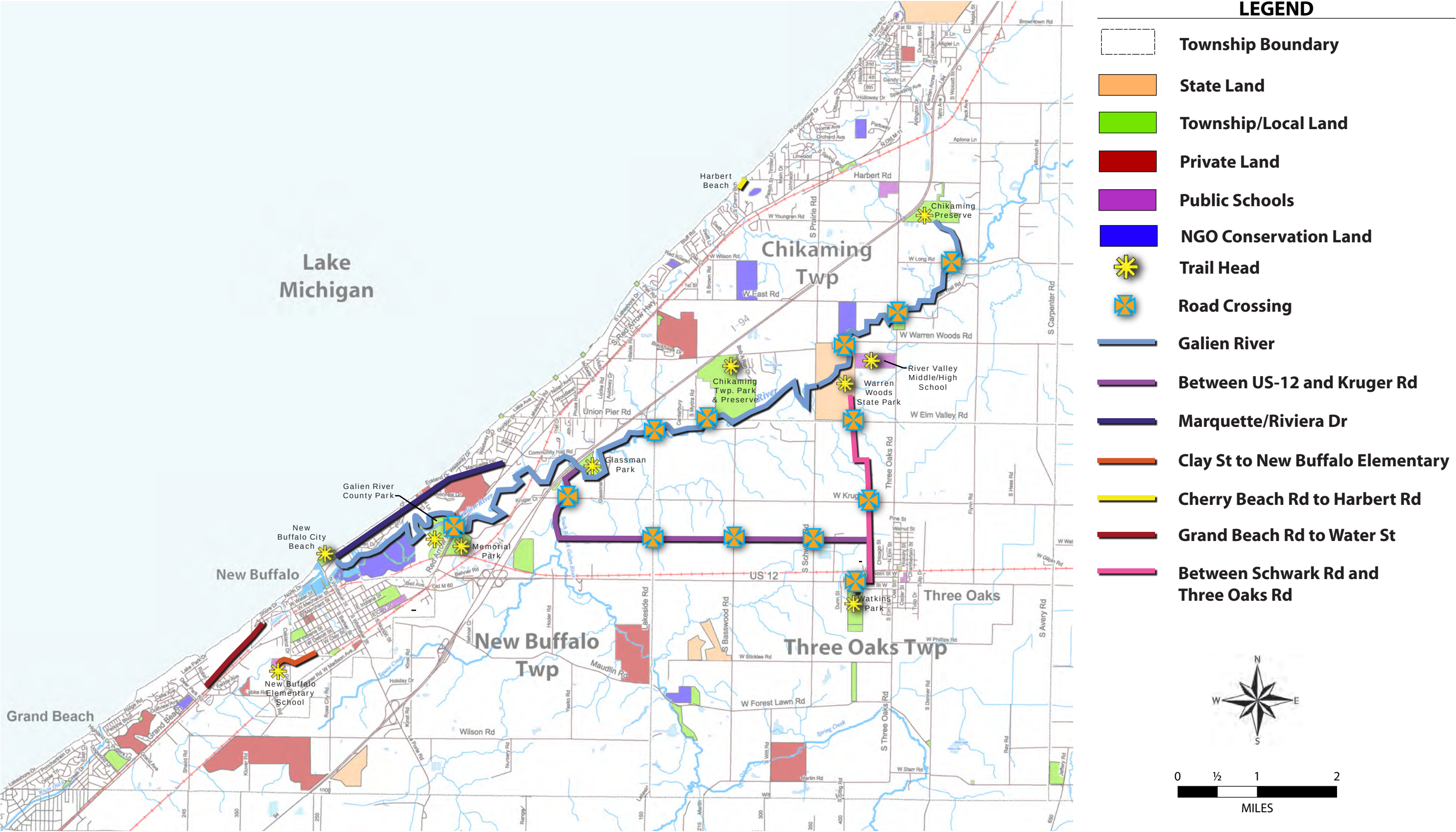
POTENTIAL ROUTES ON PRIVATE LANDS

Several routes utilizing private lands were identified early in the process. Some of these routes are shown on the Preliminary Plan and others were not shown due to the Steering Committee's response and the improbable nature of acquiring land or environmental implications involved.

Galien River Corridor

One of the first routes analyzed and discussed during the process was the possibility of a shared use path along the Galien River. This route would be very scenic and connect several parks that have riverfront property. Members of the Steering Committee, however, indicated that a shared use path would disturb the natural ecosystem and suggested a water course for non-motorized boat traffic on the river as an alternative. Upon further study, areas

POTENTIAL ROUTES ON PRIVATE LANDS MAP



along this route included wetlands that would have proved very costly to construct within due to the amount of boardwalk and permits needed. Also, according to the parcel map, easements or land acquisitions from fifty-one landowners would be needed to make this route viable. It was determined not to show this route on the Preliminary Plan. An alternate route within the I-94 right-of-way was proposed as an alternate route to the Galien River corridor which connects many of the same parks and destinations.

Between US-12 and Kruger Road

This east-west route was initially discussed as a shared use path which would be an alternative to the US-12 right-of-way connecting the Village of Three Oaks to the City of New Buffalo. According to the parcel map, twenty-five land acquisitions or easements would need to be acquired to make this route viable. The Steering Committee also indicated that a significant amount of working farmland would be taken out of service if a shared use path were to be constructed in this location. Portions of this route might also have to close frequently for pesticide application on the adjacent farmland. It was determined not to show this route on the Preliminary Plan Map. US-12 and Kruger Road are highlighted as an alternative to this route.

Marquette/Riviera Road

This Lakeshore route is shown on the preliminary plan as a viable alternate route to the Red Arrow Highway right-of-way. Signs are planned to raise awareness that the road is shared by non-motorized and motorized traffic to improve safety. Approval from two neighborhood associations will be needed to install the signs on this portion of the route. Conversations with members of these associations indicate that the project will need further dialogue with the key members.

Clay Street to New Buffalo Elementary

This route was discussed as a shared use path that would connect New Buffalo Elementary School with the Clay Street route to New Buffalo High School. Early discussions indicated that one homeowner would not be willing to allow access from Clay Street. Discussions with the school district indicated that an alternative route could be created due to their ownership of land from Detroit Street east. This route, with the overwhelming support from the School District, is included on the Preliminary Plan Map and is shown down Eagle Street to Detroit Street making it possible to work around the private landowner at the end of Clay Street.

Cherry Beach Road to Harbert Road

This shared use path route is shown in the preliminary plan to complete the loop between Cherry Beach Road, Harbert Road and Red Arrow Highway. According to the parcel map, three easements or land acquisitions would be needed to gain access for a shared use path. Members of Chikaming Township later requested that this segment be removed from the final plan.

Grand Beach Road to Water Street

Although this segment is shown on the preliminary plan and final plan as part of the US-12 route, the possibility exists to connect Grand Beach Road to Water Street with a shared use path. This segment would be on the west side of the railroad tracks and provide a scenic alternative to the US-12 right-of-way. According to the parcel map, six easements or land acquisitions would be needed to make this route viable. Discussions with landowners have taken place, and it appears that the existing landowners are generally interested in the proposal. If not, a shared use path within the US-12 right-of way would be the alternative.

Between Schwark Road and Three Oaks Road

This segment would connect Warren Woods State Park with Watkins Park and consists of a shared use path primarily through farm land. According to the parcel map, ten easements or land acquisitions would have to be obtained from private landowners and farmland would be taken out of service to make this route viable. Portions of this route would also have to close frequently for pesticide application on the adjacent farmland. It was determined not to show this route on the preliminary plan. Three Oaks Road and Schwark Road are highlighted on the Preliminary Plan Map as alternate routes.

PUBLIC INPUT PROCESS

A total of five public open houses were held over the course of three days (May 14-17) to gain public input on the Preliminary Plan. At these open houses, people were asked to identify the most important routes, their views on specific routes shown and to identify routes not shown on the map.

Many people identified Flynn Road, which is scheduled to be improved in the near future as an easy north-south connection between Three Oaks and Sawyer. Others mentioned additional east-west routes such as Kruger Road.

There were many discussions regarding Red Arrow Highway. There was debate on whether or not a shared use path is necessary through Harbert, or if sidewalks are sufficient. People also debated whether the shared use path would go on the east or west side of the road. Most people agreed that bike lanes should be added to Red Arrow Highway at the very minimum. Other discussions on included converting Red Arrow Highway from 4 lanes to 3 lanes through Harbert, Union Pier and New Buffalo.

People questioned the route within the I-94 corridor wondering how scenic it was and how much it would cost to build. Most agreed that it would be a great addition but not a necessity. They suggested that this route be shortened to connect only certain park lands like Glassman, Memorial Park and the Galien River Preserve.

Other destinations were brought up including the Sawyer Garden Center, local bed & breakfasts and local wineries. These destinations were discussed as a possible way to synergize with these businesses in order to program, promote and market the Hike & Bike Plan.

Two additional public presentations were held on August 6th and August 7th to present the Priority Plan. At the conclusion of these meetings, it was determined that the plan should be refined and be provided to the local governments for their review.

FINAL PLAN

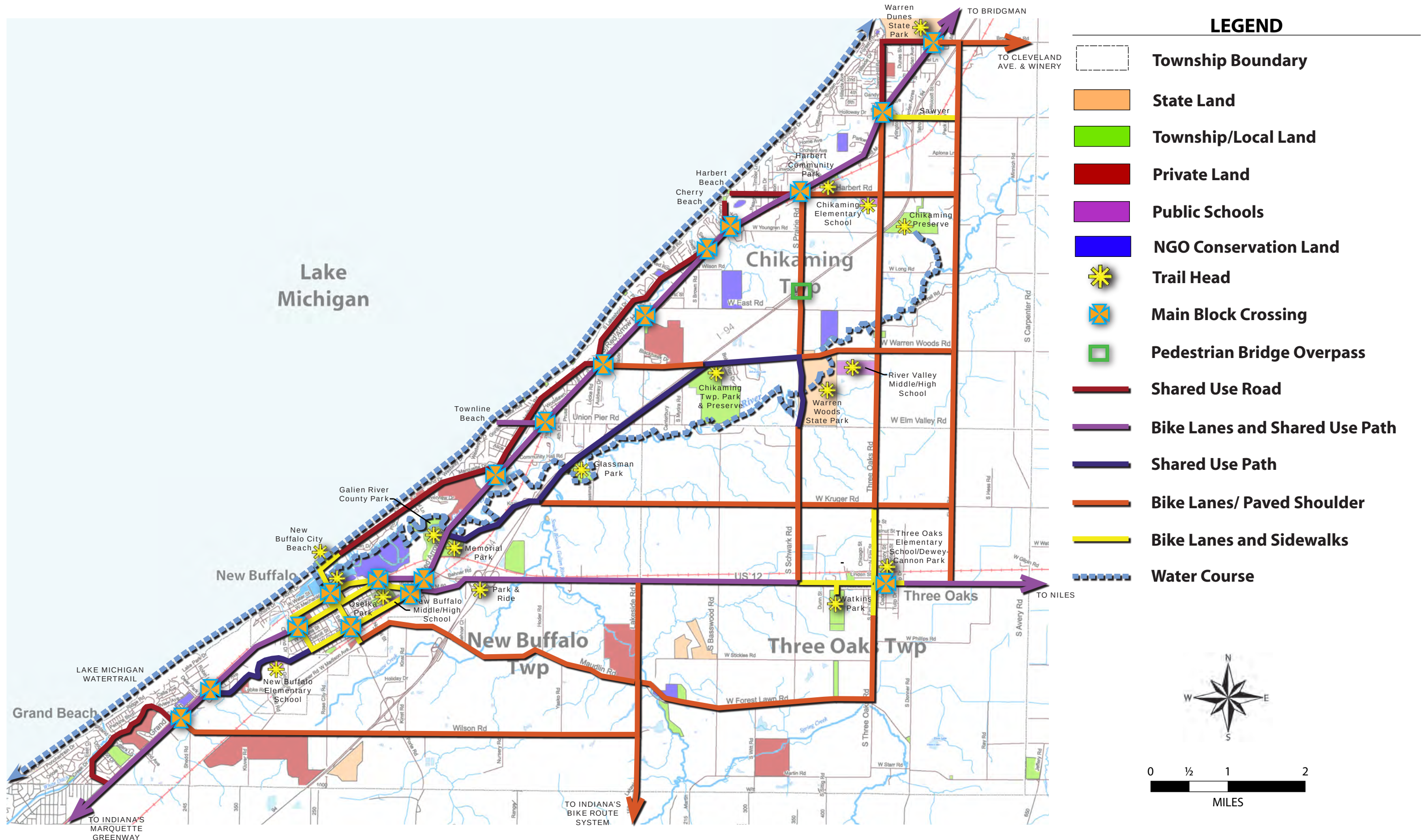
After the preliminary plan was presented to the Steering Committee, it was reviewed by Steering Committee members and various members of the community including several public officials. Upon receiving their input the preliminary plan was refined and revised into the Final Plan.

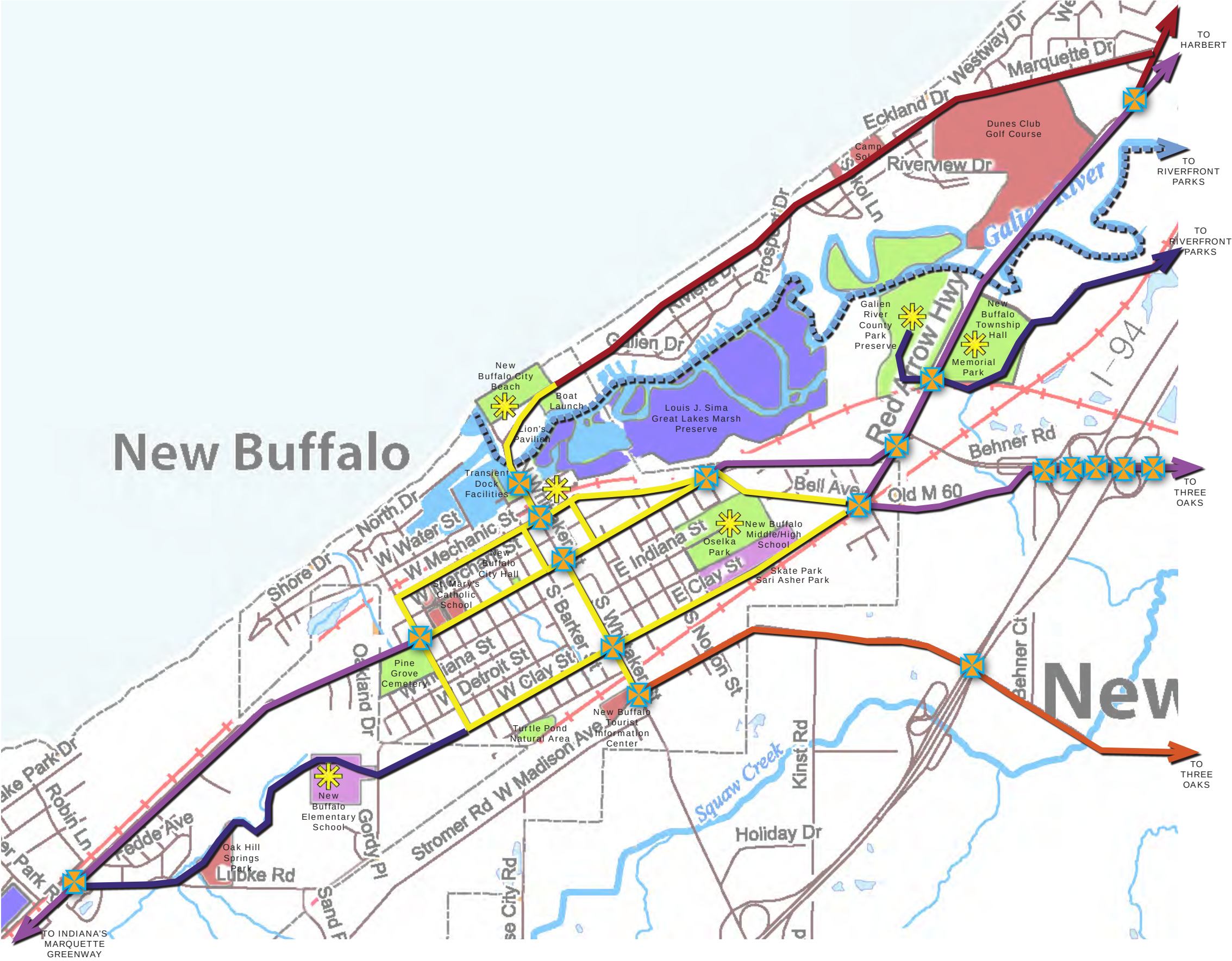
LAKESHORE ROUTES

Two lakeshore routes are shown on the final plan.

Red Arrow Highway

Paved shoulders currently exist between US-12 and the Galien River Bridge on Red Arrow Highway. It is recommended that paved shoulders become an integral part of the roadway when road reconstruction is scheduled to accommodate the experienced bicyclist that prefers “on-road” travel. It is further recommended that priority be placed on implementing a separate shared use path along the road to provide a safe route for all non-motorized users along Red Arrow Highway. It is suggested that further study be performed on the Red Arrow Highway Corridor in terms of future improvements as non-motorized transportation must be taken into account when planning these improvements. It is suggested that part of this study include controlled access studies to be performed for proposed intersections at non-motorized crossings as illustrated on the plan.





LEGEND

- Township Boundary
- State Land
- Township/Local Land
- Private Land
- Public Schools
- NGO Conservation Land
- Trail Head
- Crossings
- Shared Use Road
- Bike Lanes and Shared Use Path
- Shared Use Path
- Bike Lanes
- Bike Lanes and Sidewalks
- Water Course

While the placement of the shared use path requires further study, several options exist. The first option is to place it on the west side of the road, which would service the residential neighborhoods and the majority of commercial businesses located there without having to cross Red Arrow Highway. It would also complete the “fitness loops” on the adjacent Lakeshore Drive Route. Challenges with this option include several “tight” areas between local businesses and the road, particularly with parking and building setbacks as well as several driveway crossings.

The second option includes placing the shared use path on the east side of the highway. This option has fewer driveway crossings, however it would require more highway crossings between local businesses and residential neighborhoods. A third option would develop sections of path on both sides of the road over time and provide crossings at well defined areas.

It was also suggested by members of the Steering Committee to explore re-striping the highway from 4 to 3 lanes, which would improve non-motorized access. However, further study is needed.

Lakeshore Drive

The second route utilizes residential streets such as Lakeshore Drive, Marquette and Riviera. It is recommended that these routes be in the form of a shared road system in which bicycle, pedestrian and vehicular traffic share a road with speeds of 25 mph or less. It is suggested that signage be placed along these routes to educate the public and users. These routes are important to accommodate the residential neighborhoods near the lake and create fitness and recreational loops, utilizing the Red Arrow Highway route to complete these loops. Once this route has been established, it is suggested that separate bike lanes or sidewalks along this route be studied to provide guidance should user numbers increase in the future. Portions of this route are private roads and will need approval from each private association prior to implementing any form of improvement.

Also included with the lakeshore routes within the City of New Buffalo are by-pass routes to alleviate downtown congestion which includes pedestrian and vehicular traffic on Whittaker Street. These routes include a western route along Mechanic Street and a southern route that will by-pass the US-12 and Red Arrow Highway intersection by traveling along Old M-60 and Bell Avenue to Clay and Eagle Streets. Alternative routes are also highlighted to relieve congestion on Whittaker Street, including Barton and Townsend Streets. It is recommended that the majority of these routes take the form of sidewalks and bike lanes on both sides of the road for safe travel through the City. The routes should also be in accordance with the City Of New Buffalo’s Business Improvement District Plan.

Both Steering Committee members and public comment have indicated that the lakeshore routes mentioned above are essential in providing a more scenic and less congested alternative to Red Arrow Highway.

NORTH-SOUTH ROUTES

Three north-south routes are shown on the final plan. They include improving roads to include bike lanes and/or paved shoulders. These types of improvements are recommended based on vehicular traffic volumes and the rural character found in this location between Sawyer and the Village of Three Oaks.

Schwark Road/Prairie Road

In order to provide adequate bike lanes extensive improvements are needed. These include paving portions of Prairie Road that are currently gravel and adding paved shoulders to accommodate bike lanes. The other significant route to connect Prairie Road with Schwark Road is a separate shared use path through Warren Woods State Park. This portion of the route must be implemented in cooperation the Michigan Department of Natural Resources (MDNR). Another portion of this route is a pedestrian bridge across I-94. Users could use the East Road bridge to cross over I-94 until a pedestrian bridge is determined feasible. It is suggested that a separate

pedestrian bridge would be a great billboard for the Hike & Bike system as well as getting people across I-94 in a more direct manner. It is recommended that the elements of this route be studied further to determine feasibility.

Three Oaks Road

This road, while rural in character, has the most vehicular traffic between Sawyer and the Village of Three Oaks. It also has steep, sloped drainage ditches on both sides without shoulders. In order to provide adequate bike lanes the ditches need to be relocated and the road expanded to include paved shoulders to accommodate the bike lanes. These improvements will have significant costs and therefore, it is recommended that implementation be postponed until the entire road can be reconstructed. This reconstruction is not a road commission priority at this time.

Flynn Road

This road is scheduled to be improved by the Berrien County Road Commission (BCRC) in the future from a gravel road to a paved road. It is recommended that paved shoulders be included in this improvement project to accommodate bike lanes. If Flynn is improved beforehand then at a minimum it should be a “shared road.” Also included in this route is a safe route through the Village of Three Oaks to Flynn Road to alleviate the need for additional crossing improvements at US-12. This route recommends sidewalks and bike lanes on Elm Street and connection to Kruger Road, north of Downtown. Both, Steering Committee members and public comments have indicated that this would be the most feasible north-south route to implement at this time, with the possibility of one of the other two routes becoming feasible.

EAST-WEST ROUTES

A total of 4 east-west routes are shown on the final plan and have been identified for transportation purposes between the City of New Buffalo and the Village of Three Oaks as well as between the Village of Grand Beach and The Village of Three Oaks.

Kruger Road

The northernmost east-west route is identified along Kruger Road. It is a popular bicycle corridor and has a low traffic volume. It is recommended that if this route is implemented, the road should be improved with paved shoulders for bike lanes and/or at a minimum be signed as a shared road.

US-12

This is the most direct route between the Village of Three Oaks and the City of New Buffalo. It is considered a State trunk line and a Heritage Route. While this road carries larger volumes of traffic than adjacent roads, MDOT is planning to improve and reconstruct the portion of US-12 between Red Arrow Highway and Hoder Road. It is recommended that paved shoulders become an integral part of the roadway when road reconstruction is scheduled to accommodate the experienced bicyclist that prefers “on-road” travel. It is further recommended that priority be placed on implementing a separate shared use path along the road to provide a safe route for all non-motorized users along US-12. Within the Village of Three Oaks, it is recommended that bike lanes and sidewalks be implemented, instead of the paved shoulders and a separate shared use path, due to space constraints within the right of way.

In a public meeting, it was also suggested that a trailhead be constructed at the US-12 - Interstate 94 interchange to accommodate commuting bicyclists. It is recommended that the Friends of Harbor Country Trails and New Buffalo Township work with MDOT to choose a location and for funding sources for such a project.

Jefferson/Maudlin/Forest Lawn Roads

This is the most scenic route south of US-12. It winds through forests and is currently a popular road for bicyclists. While this road has low vehicular traffic volumes, the winding nature of the road can decrease visibility of non-

motorized users. It is recommended that paved shoulders/bike lanes be added to this route for safe travel as a designated non-motorized route and/or at a minimum be signed as a shared road.

Wilson Road

This road is currently scheduled for future reconstruction and improvement by the BCRC. It would provide a route between the Village of Grand Beach and the Village of Three Oaks by utilizing Lakeside Road. It is recommended that paved shoulders/bike lanes be included in the reconstruction of Wilson Road. Similar improvements are also recommended for Lakeside Road to provide a connection with the US-12 route.

Other Routes

Other east-west routes include Browntown Road, Sawyer Road, Harbert Road and Warren Woods Road. These routes link schools, businesses and parks. It is recommended that these roads be improved according to the plan to provide safe non-motorized transportation to these destinations.

The Steering Committee members indicated the most important east-west route to consider for improvement is the US-12 Corridor due to its direct configuration and relatively short-term schedule for improvements.

OTHER ROUTES

Other routes have been identified as being vital links to schools and parks which will be used as trailheads for the system. These trailheads will act as a start point and/or finish point to enter and exit the trail system, provide parking lots for vehicles and possible restroom facilities for trail users.

Lubke Road

A shared use path is recommended between Clay Street and Lubke Road to link New Buffalo Elementary School to the system.

I-94

A route was identified to connect Memorial Park, Glassman Park, Galien River County Park, Chikaming Township Park & Preserve and Warren Woods Park. It would be in the form of a shared use path and travel primarily along Kruger Road, I-94 and Warren Woods Road. Cost sharing options may be available between MDOT and the Friends of Harbor Country Trails to construct this portion of the plan. While a field study was performed, a separate feasibility study and approval from MDOT is needed to determine if this project is feasible. If so, the best construction methods and associated construction costs will also need to be determined.

Townline Road

A shared use path along the north side of Townline Road between Lakeshore Road and Townline Beach is being implemented in cooperation with the BCRC and Chikaming Township. It is recommended that this path be extended to Red Arrow Highway along with the addition of paved shoulders/bike lanes for beach traffic.

Water Course

A water course was also suggested as part of the non-motorized trail plan along the Galien River to link parks and provide recreation opportunities. To implement a water course, it is recommended that boat access points be constructed in parks along the route which could also act as Bluewater trailheads. For example, the public access site on Red Arrow Highway and the Galien River is currently used as a put-in point and then the New Buffalo City Beach is used as a take-out point to complete that portion of the water course. It is also recommended that volunteers be recruited to remove debris up river to maintain a navigable route for non-motorized boating.

In addition to the Galien River Water Course, the Lake Michigan Watertrail is shown connecting the Galien River to parks along the Lake Michigan Shoreline for non-motorized boat traffic only. Efforts are already underway to enhance the Lake Michigan course in Indiana with site amenities such as; boat storage, camping and bicycle use

planned at the Indiana Dunes National Lakeshore. It is recommended that similar site amenities be planned for Warren Dunes State Park and possibly New Buffalo City Beach.

TRAILHEADS & RESTROOMS

While the final plan identifies potential trailhead locations, it is recommended that additional locations be explored by the Friends of Harbor Country Trails to accommodate restrooms between existing facilities. Three particular locations would be beneficial to users; between the Village of Three Oaks and the City of New Buffalo, between the City of New Buffalo and Harbert and between the Village of Three Oaks and Sawyer. Public restrooms in each of the communities are also highly desired. It is recommended that trailheads include parking and restroom facilities for trail users at Oselka Park, Three Oaks Park and Chikaming Park.

PRIORITY PLAN

The Priority Plan was developed to indicate the most important routes to get from “Point A to Point B.” It was also developed to take advantage of projects that may be easier to implement than other routes due to existing reconstruction plans. The purpose of this plan is to prioritize projects within the Final Plan and does not discount nor discourage the development of each portion of the Final Plan. If an opportunity presents itself to implement a segment of the Final Plan that is not part of the Priority Plan, it is encouraged that these opportunities be taken advantage of if available.

After analyzing all the routes, a total of three main routes were chosen to complete the study area triangle. It is recommended that links to three main trailheads anchor these routes. They should be developed simultaneously to provide start and finish points. The trailhead links are Warren Dunes State Park, Watkins Park and Oselka Park. They may also include the development of short segments on adjacent road right-of-ways or through public property to link to existing parks, schools, parking lots and restroom facilities. For example, Chikaming Township has specifically identified the desire for connections to Chikaming Township Park and Preserve, Harbert Road Preserve, River Valley High School, Chikaming Elementary School and public beaches. It is recommended that each jurisdiction take on the responsibility of implementing their own connections from these locations to the Priority Plan routes and form collaborations with adjacent jurisdictions when connecting between jurisdictions, especially when applying for state grants.

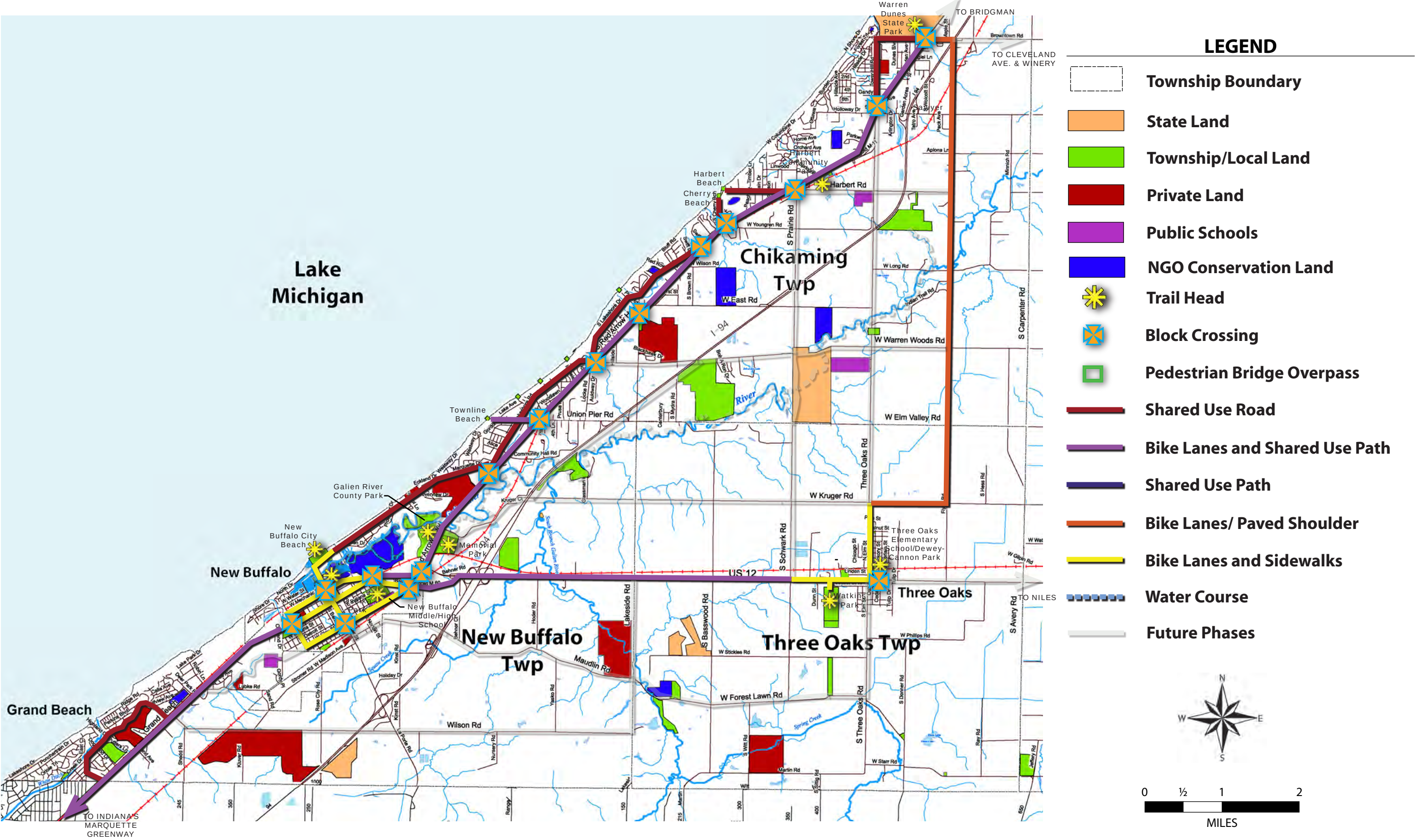
PRIORITY PLAN PHASING

The Steering Committee identified the Red Arrow Highway and Lakeshore Drive routes as the most important routes, labeled as “Priority 1” due to the amount of non-motorized traffic already occurring up and down the lakeshore. The next most important route identified was US-12 (east-west route), labeled as “Priority 2” with Flynn Road being “Priority 3” based on current traffic counts. Please be aware that these routes should be pursued simultaneously.

RED ARROW HIGHWAY - PRIORITY 1

While Red Arrow Highway, like US-12, may not be the most scenic route, it does provide a direct route along the lakeshore and links with several area parks, businesses and residential neighborhoods. It is an important route for the commuter and recreational user. As mentioned in the Final Plan section, a priority should be placed on the implementation of the separate shared use path along the Red Arrow Highway, while paved shoulders are advocated when the road is reconstructed.

Prior to the implementation of a shared use path or bike lanes along Red Arrow Highway there needs to be additional study. It is necessary to determine which side of the highway the separate shared use path should be



constructed. As mentioned in the Final Plan section, there are several advantages and disadvantages for each option. A shared use path on the west side of the road appears to benefit a greater residential population and businesses. This would also create a series of “recreation-fitness” trail loops with Lakeshore Road without having to cross Red Arrow Highway. It would also provide the best links to area businesses and beaches. Road and driveway crossings still need to be a prime consideration with safe links to the businesses on the east side of the road as well.

Additional studies are needed from both BCRC and MDOT to determine the best way to integrate non-motorized components on the road itself. A popular notion is to re-stripe the existing 4 lane Red Arrow Highway to 3 lanes and 2 bike lanes without having to modify the existing road width. This idea needs to be approved by both the BCRC, MDOT and each jurisdiction prior to implementation. If this can be accomplished, a simple restriping of the road would allow for continuous paved shoulders for bicycle traffic at minimal cost. If the road configuration stays four lanes of traffic, the shoulders in several areas will need to be paved, which takes additional right-of-way, encroaches on the already congested business parking spaces, and will be a significant cost. Currently bicyclists are forced to “take the right lane” in areas where paved shoulders are not present which creates a safety concern with increased vehicular traffic.

A separate study is underway in the New Buffalo Business Improvement District, which will determine how to best accommodate non-motorized transportation in and around downtown New Buffalo. As shown on the plan, we recommend bike lanes and sidewalks on the local streets in this area. It is important that these plans work together for future funding and planning of downtown New Buffalo. However, New Buffalo specifically excluded a 4 to 3 lane conversion within the city limits.

Also analyzed in the study is the area between the City of New Buffalo and the Village of Grand Beach. While US-12 includes paved shoulders in this area for bicycle commuters, members of the Steering Committee have expressed an interest in an “off-road” trail for other non-motorized traffic to connect these two communities. Grand Beach Road parallels US-12 in this area from the Indiana State line to Grand Beach. It is recommended to explore the possibility of connecting this road north via private easements or land acquisition to Water Street in New Buffalo. This route would provide a more scenic alternative to US-12 but will be subject to approval from the private landowners in this location. If this route is deemed unfeasible, a separate shared use path is recommended along US-12 to safely accommodate slower and less experienced non-motorized traffic between New Buffalo and Grand Beach.

LAKESHORE DRIVE - PRIORITY 1

The routes highlighted on the Hike & Bike Priority Plan west of Red Arrow Highway consist of Tower Hill Road, Browntown Road, Lakeshore Drive, Cherry Hill Road, Harbert Road, Riviera and Marquette Drives. Many of these roads make up 1/2 mile to 2 mile loops with the Red Arrow Highway Route. These loops were identified as an important supplement to the Red Arrow Highway route to create fitness/recreation loops and a more scenic alternative which connects residential neighborhoods with the rest of the Hike & Bike System.

It is recommended that these routes be identified as “shared roadways.” Implementation of this concept consists of signage along the route coupled with a “public education process.” The education process can be performed through public education forums, brochures, video and/or webinars. It is recommended that the Friends of Harbor Country Trails or local community organizations spearhead this effort to effectively inform the public on how to use a shared roadway. Should traffic volumes increase to levels that are no longer safe, it may become necessary to begin the planning process for adding sidewalks or bike lanes along these routes, which involves significant reconstruction of the existing public and private infrastructure.

Portions of this route are privately owned by different homeowner's associations. While these portions are already part of the "Backroad's Bikeway" bike routes, approval and support will be needed by these associations to effectively implement any recommended improvements in these locations.

The most effective funding sources for this type of development is best discussed with local governmental agencies, local community associations and local private grant opportunities as this type of project can be implemented at a relatively low cost when compared to reconstruction of infrastructure.

US-12 - PRIORITY 2

Although this route is not the most scenic, it offers many benefits. It is the most direct route between the Village of Three Oaks and the City of New Buffalo. MDOT has plans to reconstruct a portion of the road between Red Arrow Highway and Hoder Road. Paved shoulders are recommended in this reconstruction and all future reconstructions between Red Arrow Highway and Three Oaks Road. Also, a separate shared use path is recommended along this road to provide access for other non-motorized transportation users. The Steering Committee has identified this shared use path as a priority within the US-12 corridor over paved shoulder improvements to the road.

A possible funding source to implement this route is the MDOT Enhancement Grant. The grant is designed to aid in the development of non-motorized transportation. The MDOT Enhancement Grant can be applied for anytime. Refer to the "Supplemental Information" section of this report for more potential funding sources.

FLYNN ROAD - PRIORITY 3

This interim route is located one mile east of the Village of Three Oaks. It provides a link north to Sawyer and Warren Dunes State Park until the other routes can be developed. BCRC has plans to improve the road and pave the unpaved portions. It also has significantly lower vehicular traffic volumes when compared to Three Oaks Road, which is located one mile west of Flynn Road. Also included in this priority would be developing a safe non-motorized route on Elm Street and connecting to Kruger Road to get over to Flynn Road from US-12.

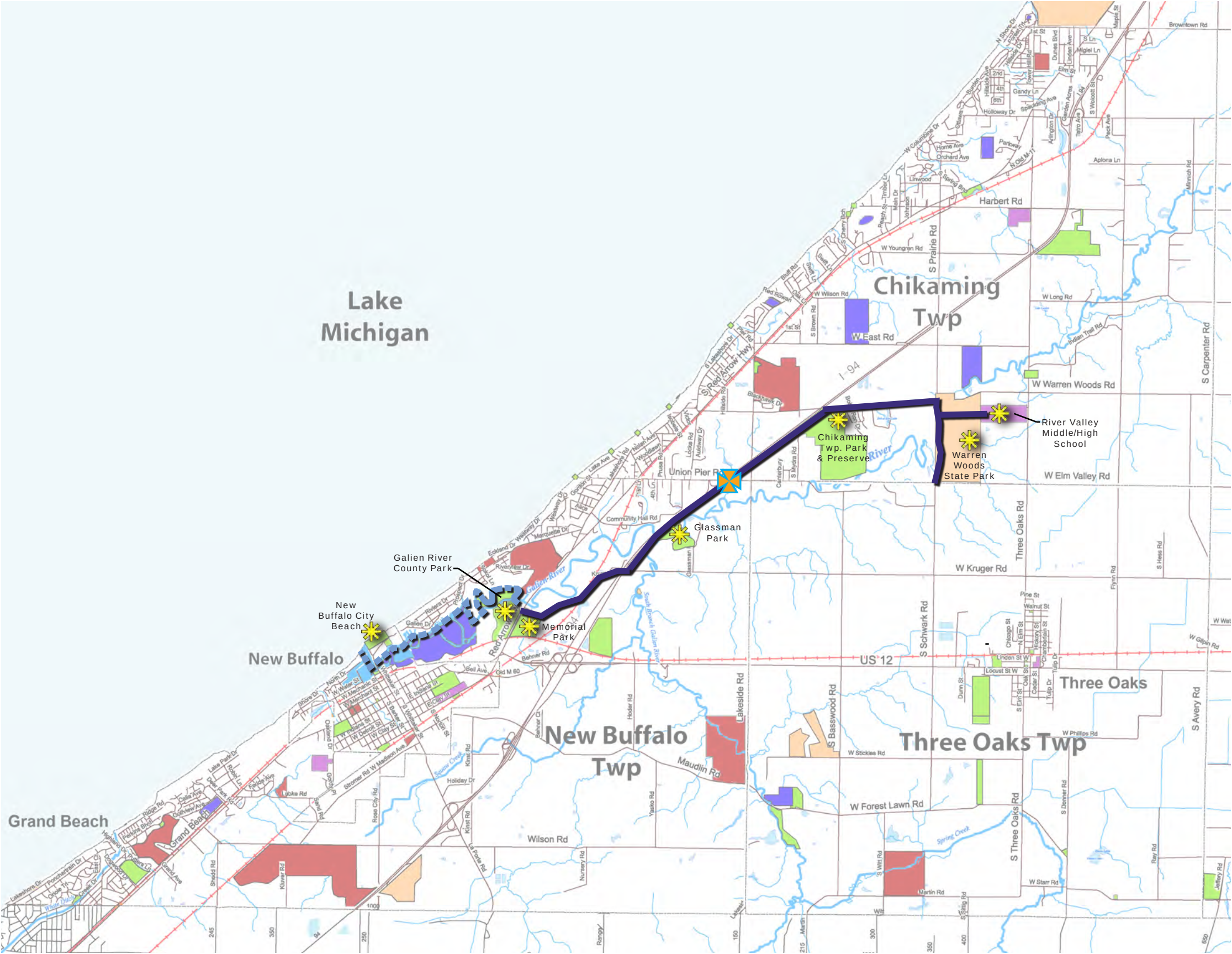
The MDOT Enhancement Grant, the BCRC yearly 1% tax allotment for non-motorized transportation and the Pokagon Fund are possible funding sources. Cost should be minimal as the only needed improvements are paved shoulders or shared road options. Refer to the "Supplemental Information" section of this report for more potential funding sources.

TRAIL PRIORITY PLAN

This route was separated from the other priority routes because of its unique recreational characteristics. It includes the development of a shared use path connecting a series of parks along the Galien River and Interstate 94. The path is proposed to run along Kruger Road from Red Arrow Highway to Interstate 94. From that point the route continues in the I-94 right-of-way and acquired easements, including Chikaming Park, until reaching Warren Woods Road, where it continues east to Warren Woods State Park. This route has several unique characteristics, with the main characteristic being a continuous shared use path connecting five parks and one school. Other unique characteristics include only one major road crossing (Union Pier Road) and several scenic vistas and forested areas along I-94 and Warren Woods Road.

Collaboration between the Friends of Harbor Country Trails, BCRC and MDOT is critical to effectively implement this project. The most challenging portion of this route is along I-94 which includes ravines, three areas of steep grades and a crossing over the Galien River. It is also recommended that the Kruger Road Bridge over I-94 be improved to accommodate non-motorized transportation users. A separate feasibility study is recommended for

TRAIL PRIORITY PLAN MAP



LEGEND

- Township Boundary
- State Land
- Township/Local Land
- Private Land
- Public Schools
- NGO Conservation Land
- Trail Head
- Road Crossing
- Shared Use Path
- Water Course



this portion with MDOT, Chikaming Township, and New Buffalo Township being heavily involved in the process. The MDOT Enhancement Grant and the MDNR Trust Fund grant are both designed to aid in the development of this type of trail system. The MDNR Trust Fund can be applied for yearly with a deadline the first of April. The MDOT Enhancement Grant can be applied for anytime. Refer to the “Supplemental Information” section of this report for more potential funding sources.

IMPLEMENTATION

STRATEGIES

The following implementation strategies should be considered by the Friends of Harbor Country Trails 501(c)3 Organization as well as each governmental agency within the Hike & Bike Study area when adopting the Hike & Bike Plan.

1. Ensure that each governmental agency within the Hike & Bike Study area adopts or supports this plan. This is crucial to apply for funding.
2. Perform additional studies as recommended in this report and gain approval by the appropriate municipal body and review agencies.
3. Actively pursue acquisition of land or easements as necessary for recommended route implementation.
4. Utilize non-motorized transportation language or terms included in this report.
5. Implement nationally recognized AASHTO design standards when designing non-motorized transportation facilities.
6. Design to ADA standards.
7. Continue working with State and local review agencies during the implementation process.
8. Prepare a maintenance plan to ensure proper upkeep of each route being implemented.
9. Utilize the public input process at appropriate times during the design and construction process.
10. Educate the public on the value of a hike and bike system.
11. Educate the public on the different types of non-motorized transportation routes and how they are used.
12. Actively pursue Federal, State, local and private funding sources.
13. Continue to advertise and market the Hike & Bike Plan by maintaining the website and communicating with neighborhood associations and the various governmental bodies involved.
14. Support local governmental bodies with developing non-motorized transportation policy making.

PROCESS

It is recommended that a process be considered for implementation of each route proposed. The following process is an example:

Planning

1. Determine the base information
2. Analyze data
3. Prepare a preliminary design
4. Determine ownership of land (park, road right-of-way, private, etc.)
5. Determine policies to govern the route
6. Prepare a more detailed cost estimate

Funding

1. Ensure that the underlying jurisdiction(s) where the route is being proposed has adopted or supports this plan and has up-to-date master planning documents referencing this plan.

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2. Apply for grant funding - Federal and State funding opportunities, private foundations, others.

Design Development

1. Meet with the public to discuss design parameters.
 - A. Discuss individual needs:
 - i. Trail location within the proposed route
 - ii. Individual access to the trail from adjacent property
 - iii. Privacy issues - fencing, landscaping, setbacks
 - B. Review specific design issues
 - i. Vehicle deterrents - bollards, gates, barriers
 - ii. Drainage - trench drains, culverts, catch basins, bioswales
 - iii. Road crossings and intersections
 - iv. Signs - location, type, size
 - v. Amenities - benches, trail markers, litter receptacles
 - vi. Materials - asphalt, concrete, limestone, cinders
 - vii. Refine cost estimate

Construction Documents

1. Prepare construction documents based on the design development process
2. Prepare written specifications
3. Develop final cost estimates
4. Publicly bid the project
5. Observe construction
6. Conduct a maintenance and post construction evaluation

TOOLS

Utilize the following tools during the implementation of specific portions of the Hike & Bike Plan.

1. Materials

It is recommended that the Friends of Harbor Country Trails consider trail surfaces during the planning process. Solid surfaces, such as asphalt and boardwalks, are the primary choices for shared use paths. There are applications where gravel and wood chips are acceptable. The choice of materials must be based upon the site, user groups and the frequency of use.

2. Conservation Practices

The most up to date conservation practices are recommended when developing a trail within any vegetated or environmentally sensitive area. Enhance and/or avoid sensitive natural features wherever possible (primarily large healthy trees and/or underbrush). Use interpretive signage and education where feasible to allow for a greater appreciation of natural resources. Develop conservation policies that protect and enhance the natural systems associated with this area.

3. Lighting

Lighting is not recommended for the majority of routes but can be beneficial in areas of high use or where there are security and safety concerns. Typically, hours of operation for non-motorized trails are from dawn until dusk. The need for lighting usually appears in densely populated areas where after dark use is promoted such as near downtown business centers, retail areas and event venues.

4. Noise

Non-motorized trails are generally quiet. Noise usually becomes a factor if large events are scheduled on the trail. An occasional barking dog or a person's voice are the main sources of noise. If this is an area of concern, enforcement of noise regulation can control most of these disturbances. In areas where noise may be a nuisance to trail users, design strategies such as noise barriers can be implemented.

5. Trail Heads and Access Control

A trail head acts as a point of entrance and exit. Many times they include parking lots. A more intimate connection is recommended for neighborhoods using barriers and/or gates to deter motor vehicles from entering the trail. Signs should be posted to inform users of these regulations.

6. Publicly Owned Land

Routes are being recommended on publicly owned land. Any path design must respect the rights of the adjacent landowners as much as possible. Individual landowners should be consulted during the preliminary design stage of the route to account for privacy measures among other design issues.

7. Privately Owned Land

There are two ways to develop trails on privately owned land. One way is to obtain land and place it in public ownership. The second way is to secure an easement which allows the trail to be constructed on private land. Both options are accomplished by either purchase or donation. It is not recommended that eminent domain or condemnation be used to secure private land. Riparian rights come with the landowner's bundle of rights and cannot be granted without the owner's permission through an easement or purchase.

8. Public Easements

It is recommended that when a municipality seeks easements for public use such as utilities and maintenance that a provision be included in the easement agreement to allow for recreational use or future trail construction within that easement.

9. Private Easements

Private easements are a good method of acquiring the land for a path and do not require the same amount of money as the purchase of entire parcels.

10. Other Agencies

It is recommended to communicate with and utilize the expertise of other agencies during the design, development and management of this trail system. Other agencies include Drain Commissions, Road Commissions, Police Departments, Public Service Departments, Park's Departments and Planning Departments.

11. Screening

It is recommended that there be adequate setbacks and generous screening or buffers between the trail and the adjacent property owners. Use vegetation, berms and vertical barriers, fencing or similar means to provide and create privacy where requested.

12. Trail Advocacy Groups

A trail advocacy group would allow public participation in the development and monitoring of the trails. Work with local law enforcement agencies to implement police patrols and neighborhood watch programs from the initial stages of development. Add a regular bicycle patrol component to

the police program. Allow designated neighbors to participate in the patrol of the trails and encourage communication and participation.

13. Maintenance Program

Designate who will be maintaining the off-road trail portions of the Hike & Bike system. The trail will require regular trash pick-up, sweeping and plowing. Provide personnel and equipment necessary to perform these functions.

14. Adjacent communities

Each municipality located within the Hike & Bike Plan study area should work together to discuss connections between each municipality. It is important that timing and exact connection points are agreed upon prior to implementation.

15. Bridges

Work with MDOT and the BCRC to coordinate any future improvements to roadway bridges. Accommodations should be made to include non-motorized transportation provisions whenever a bridge reconstruction or new bridge is considered within the study area.

16. Law Enforcement

Work with the Berrien County Sheriff's Department, local police departments and neighborhood watch programs to ensure safety and security along all routes.

17. Crossings

Perform traffic studies to determine the safest location for pedestrian crossings and ensure that the safest and best practices are used in the design and implementation of the trail system.

ACTION PLAN

The Steering Committee and the Friends of Harbor Country Trails have identified the first target projects to be implemented and have also discussed the process to accomplish this.

The first priority is to establish Friends of Harbor Country Trails board members. An interim board has been established and is made of 5 members. The goal of the Friends of Harbor Country Trails is to grow to 7 members with representatives appointed from each jurisdiction to be on the board within the next 6 months. The Friends of Harbor Country trails will be meeting monthly to gain support and grow in membership. The board could grow to 18 board members and/or committees in the next 6-12 months.

Once this task has been established, it has been suggested that the board members seek out the Pokagon Fund to help fund and the organization initially which may include funding 1-2 positions and/or consultants to assist with projects, grant applications and management issues.

Based on information received from local jurisdictions and the steering committee meetings, a list of possible pilot projects and tasks are outlined below. These projects provide initial direction but are not all inclusive and should not limit the board to pursue other projects that meet criteria for funding opportunities.

CITY OF NEW BUFFALO

1. Jefferson Street/ Maudlin Road Reconstruction

- City is looking at reconstructing this road

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- The Friends of Harbor Country Trails should attend public meetings and contact the City regarding this project and advocate for paved shoulders as the plan suggests.

2. Clay Street between High School and Elementary School

- Complete construction of sidewalks on both sides of the road
Estimated Opinion of Cost: \$348,480
- Add bike lanes on the road
Estimated Opinion of Cost: \$563,345
- Improve crossing at Clay Street and US-12
Estimated Opinion of Cost: \$215,234
- Possible funding sources
 - SAFETEA-LU
 - CMAQ
 - Safe Routes to School (SR2S)
 - Pokagon Fund
 - Michigan Gateway Community Foundation
 - Berrien County Community Foundation
 - City of New Buffalo

3. Marquette- Riviera Shared Road Awareness

- Friends of Harbor Country Trails should talk to each Neighborhood Association about raising shared road awareness.
- Publish brochures on proper use of a shared road
Estimated Opinion of Cost: \$3,000
- Install shared road awareness signs for vehicular traffic
Estimated Opinion of Cost: \$58,000
- Possible Funding Sources
 - Pokagon Fund
 - Michigan Gateway Community Foundation
 - Berrien County Community Foundation
 - City of New Buffalo

4. Clay Street between High School and US-12

- Complete construction of sidewalks on both sides of the road
Estimated Opinion of Cost: \$150,000
- Add bike lanes on the road
Estimated Opinion of Cost: \$230,000
- Improve crossing at Clay Street and US-12
Estimated Opinion of Cost: \$215,234
- Possible funding sources
 - SAFETEA-LU
 - CMAQ
 - Safe Routes to School
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - City of New Buffalo
- See Multi-Jurisdictional Projects below

5. *Buffalo Street Corridor Study*

- Commission a study on Buffalo Street with MDOT to specifically look at vehicle and pedestrian safety.
Estimated Opinion of Cost: \$38,000
- Possible Funding Sources
 - Act 51 (Road Commission)
 - SAFETEA-LU Transportation Enhancement
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
- See Multi-Jurisdictional Projects below

BERRIEN COUNTY ROAD COMMISSION

1. *Wilson Road*

- Road Commission is planning on reconstruction of a portion of Wilson Road east of LaPorte Road.
- The Friends of Harbor Country Trails should attend public meetings and contact the Road Commission to advocate for paved shoulders as the plan suggests.
- Possible Funding Sources
 - Act 51 (Road Commission)

2. *Flynn Road*

- Improvements have been recently made on this road and future improvement plans have also been identified.
- The Friends of Harbor Country Trails should attend public meetings and contact the Road Commission to advocate for paved shoulders as the plan suggests.
- Possible Funding Sources
 - Act 51 (Road Commission)

3. *Red Arrow Highway Corridor Study*

- Commission a study on Red Arrow Highway to specifically look at vehicle and pedestrian safety.
Estimated Opinion of Cost: \$50,000
- Possible Funding Sources
 - Act 51 (Road Commission)
 - SAFETEA-LU Transportation Enhancement
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
- See Multi-Jurisdictional Projects below

CHIKAMING TOWNSHIP

1. *Lakeshore Drive Shared Road Awareness*

- Publish brochures on proper use of a shared road
Estimated Opinion of Cost: \$3,000
- Install shared road awareness signs for vehicular traffic
Estimated Opinion of Cost: \$62,000
- Possible Funding Sources
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - Act 51 (Road Commission)
 - Chikaming Township

2. *Red Arrow Highway Corridor Study*

- Commission a study on Red Arrow Highway to specifically look at vehicle and pedestrian safety.
Estimated Opinion of Cost: \$50,000
- Possible Funding Sources
 - Act 51 (Road Commission)
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - SAFETEA-LU Transportation Enhancement
 - Chikaming Township
- See Multi-Jurisdictional Projects below

3. *Red Arrow Highway between Townline Road and Lakeshore Drive and Townline Road*

- After the Red Arrow study is completed, construct this portion as recommended to complete the “fitness loop”
- Estimated Opinion of Cost: \$500,000
- Possible Funding Sources:
 - SAFETEA-LU Transportation Enhancement
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - New Buffalo Township
 - Act 51 (Road Commission)
- See Multi-Jurisdictional Projects below

NEW BUFFALO TOWNSHIP

1. *Lakeshore Drive Shared Road Awareness*

- Publish brochures on proper use of a shared road
Estimated Opinion of Cost: \$3,000
- Install shared road awareness signs for vehicular traffic
Estimated Opinion of Cost: \$62,000
- Possible Funding Sources
 - Pokagon Fund
 - Act 51 (Road Commission)
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - New Buffalo Township

2. *Red Arrow Highway/ US-12 Corridor Study*

- Commission a study on Red Arrow Highway to specifically look at vehicle and pedestrian safety.
Estimated Opinion of Cost: \$50,000
- Possible Funding Sources
 - Act 51 (Road Commission)
 - Pokagon Fund
 - SAFETEA-LU Transportation Enhancement
 - Michigan Gateway Community Foundation
 - Berrien County Community Foundation
 - New Buffalo Township
- See Multi-Jurisdictional Projects below

3. *Red Arrow Highway between Townline Road and Lakeshore Drive and Townline Road*

- After the Red Arrow study is completed, construct this portion as recommended in the completed study
- Estimated Opinion of Cost: \$500,000
- Possible Funding Sources:
 - SAFETEA-LU Transportation Enhancement
 - Pokagon Fund
 - Act 51 (Road Commission)
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - New Buffalo Township
- See Multi-Jurisdictional Projects below

4. *Shared Use Path between Memorial Park and Galien River County Park*

- Connect both parks under the railroad viaduct with a shared use path
- Estimated Opinion of Cost: \$590,000
- Possible Funding Sources:
 - Michigan Natural Resources Trust Fund
 - Land and Water Conservation Fund
 - Pokagon Fund
 - Berrien County Community Foundation
 - Berrien County Parks
 - Michigan Gateway Community Foundation
 - New Buffalo Township

5. *Shared Use Path between the Village of Grand Beach and City of New Buffalo*

- Conduct a feasibility study to determine the best route which should include contact property owners on the north side of US-12 to determine if an easement or land acquisition could be obtained for a shared use path connecting Grand Beach Road to Mechanic Street. This study should also take into account the US-12- Red Arrow Highway Corridor Study
- Construct this shared use path
- Estimated Opinion of Cost: \$1,000,000
- Possible Funding Sources
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Natural Resources Trust Fund
 - Land and Water Conservation Fund
 - SAFETEA-LU Transportation Enhancement
 - Village of Grand Beach
 - City of New Buffalo
 - New Buffalo Township
 - Michigan Gateway Community Foundation
 - Act 51 (Road Commission)

6. *Red Arrow Highway Improvements between US-12 and Memorial Park*

- After the Red Arrow study is completed, construct this portion as recommended in the completed study
- Estimated Opinion of Cost: \$650,000
- Possible Funding Sources:
 - SAFETEA-LU Transportation Enhancement
 - Pokagon Fund
 - Berrien County Community Foundation

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- Act 51 (Road Commission)
 - Michigan Gateway Community Foundation
 - New Buffalo Township
 - See Multi-Jurisdictional Projects below

VILLAGE OF THREE OAKS

1. *Elm Road Improvements from US-12 to Kruger Road*
 - Bike Lane Striping
 - Estimated Opinion of Cost: \$3,000
 - Possible Funding Sources
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - SAFETEA-LU Transportation Enhancement
 - Village of Three Oaks
2. *Dewey-Cannon Park Improvements*
 - Construct public restroom
 - Estimated Opinion of Cost: \$250,000
 - Construct Hike & Bike Information Kiosk
 - Estimated Opinion of Cost: \$30,000
 - Possible Funding Sources
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Natural Resources Trust Fund
 - Land and Water Conservation Fund
 - Michigan Gateway Community Foundation
 - Village of Three Oaks

THREE OAKS TOWNSHIP

1. *Kruger Road paved shoulders from Elm Road to Flynn Road*
 - Install Paved Shoulders
 - Estimated Opinion of Cost: \$600,000
 - Possible Funding Sources
 - Pokagon Fund
 - Berrien County Community Foundation
 - Act 51 (Road Commission)
 - Michigan Gateway Community Foundation
 - Three Oaks Township

MDOT

1. *US-12 Corridor Study from Indiana Border to US-12*
 - Commission a study on US-12 to specifically look at vehicle and pedestrian safety.
 - Estimated Opinion of Cost: \$50,000
 - Possible Funding Sources
 - SAFETEA-LU Transportation Enhancement

-
- Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation
 - See Multi-Jurisdictional Projects below

2. I-94 Shared Use Path between Kruger Road and Warren Woods Road

- Commission a feasibility study for a shared use path within the I-94 Right-of-Way
Estimated Opinion of Cost: \$50,000
- Possible Funding Sources
 - SAFETEA-LU Transportation Enhancement
 - Pokagon Fund
 - Berrien County Community Foundation
 - Michigan Gateway Community Foundation

MULTI-JURISDICTIONAL PROJECTS

While most of the projects listed above require cooperation between local jurisdictions and other government agencies, many of these projects have advantages when paired with other projects to maximize their success when applying for funding. These projects are listed below:

1. Red Arrow Highway/US-12/ Buffalo Street Corridor Study

Governments involved:

- New Buffalo Township
- City of New Buffalo
- Chikaming Township
- Berrien County Road Commission
- MDOT

2. Red Arrow Highway between Lakeshore Drive and Lakeshore Drive at Townline Road

Governments involved:

- New Buffalo Township
- Chikaming Township

Additional Funding Sources:

- Michigan Natural Resources Trust Fund
- Land and Water Conservation Fund

3. Elm Road and Kruger Road from US-12 to Flynn Road

Governments involved:

- Village of Three Oaks
- Three Oaks Township

4. Clay Street from New Buffalo High School to US-12 and Red Arrow Highway from US-12 to Memorial Park

Governments involved:

- City of New Buffalo
- New Buffalo Township

Additional Funding Sources:

- Michigan Natural Resources Trust Fund
- Land and Water Conservation Fund

FURTHER CONSIDERATIONS

ORDINANCES

Some communities have completely restructured their zoning ordinances to encourage more pedestrian friendly development and implementation. It is recommended that municipalities located within the Hike & Bike Plan study area review their zoning ordinances to ensure pedestrian friendly policies. All non-motorized routes should be designed within the current zoning ordinances of the underlying jurisdiction where the route is located. Principles that should be considered are:

1. Discuss pedestrian and bicycle accommodations early in the site planning process so that existing transportation efforts can be coordinated with any proposed developments.
2. During review of new residential and commercial developments consider sidewalk design that includes connectivity between adjacent parks, schools, residential communities and commercial centers.
3. In commercial districts, consider placing a higher emphasis on pedestrian and bicycle access by reducing the amount of parking required, encouraging shared parking and by providing direct access to the front of building sites with direct sidewalk connections to the main streets.
4. Consider having the developer pay for improvements such as sidewalks and shared use paths as indicated on the final plan for all new developments. This would include sidewalks and shared use paths within the development as well as in the adjacent right-of-ways.

Many of these principles are included in the LEED Certification requirements as governed by the Green Building Certification Institute (GBCI). As interest in LEED certified projects grows, many developers have started to implement LEED principles in their projects.

FUNDING

Due to the increasing demand for non-motorized transportation all governmental agencies located within the study area should consider a long-term commitment to implementation of the Hike & Bike Plan. There are multiple options available to fund implementation of the plan.

Projects have successfully been funded through support of a millage specifically for non-motorized route implementation. The annual funding source can be used for maintenance and construction of the system and enables the governing bodies to apply for federal and state grants where local money can be leveraged as a match for other funds.

A Downtown Development Authority or Business Improvement District can also provide funding. These types of governmental bodies are funded through businesses within the district. They allow the district to improve and support the businesses through public improvements like a non-motorized transportation system.

There are a number of federal, state and private grants available for non-motorized projects and community improvements. A list of funding sources is included in the “Part 2: Supplemental Information” section of this report.

CITIZEN INITIATIVE & EDUCATION

Once implemented, citizen participation is crucial for the success of the Hike & Bike Plan. A trail advocacy group is needed to continue to voice their support for non-motorized issues. It will take a long term commitment and support by the residents of all municipalities in the study area to change planning practices to favor non-motorized transportation planning.

There are a number of ways to implement changes in planning processes including speaking with local government staff and attending meetings to speak on behalf of non-motorized projects being considered. When roadway projects are up for public review, attend the BCRC meetings to show support for non-motorized design. A continuous presence and positive outlook will signify the importance of non-motorized transportation to the community.

The trail advocacy group is also important to develop brochures and flyers for education purposes to illustrate safe use for all non-motorized routes. The trail advocacy group may also host public awareness seminars for this purpose.

PRIVATE- PUBLIC PARTNERSHIPS

Opportunities may become available along several portions of the Final Plan to form a private-public partnership in order to construct a shared use path on private property. Typically, these partnerships exist when there is a mutual advantage for both the public and the private investment. An example of this may be a residential developer recognizing the value of offering easy access to the non-motorized path for potential buyers. To accomplish this, the developer agrees to let the proposed shared use path go through the private development property. While this offers easier access for the development residents, it also provides more opportunity for aesthetic characteristics to the trail such as landscaping and other site amenities.

One possibility for this type of partnership may be on the undeveloped land between the Village of Grand Beach and the City of New Buffalo. It may be possible to bring the proposed shared use path along US-12 into this property, should the developer agree to the terms and conditions. It is recommended that this partnership be explored further and all parties involved meet to discuss this opportunity.

MAINTENANCE

Proper trail maintenance is just as important as using correct design and construction techniques. A sidewalk that becomes inaccessible because of inadequate maintenance can be just as inconvenient or undesirable as failing to construct the proper pedestrian facilities in the first place.

Maintenance Activities

Public works agencies should have a program for routine maintenance checks of trails and should have a process in place to quickly respond to citizen reports of damaged surfaces, particularly along high-priority routes. This will prevent pedestrians from using unsafe alternatives.

Public agencies should adopt a snow removal program for trails and sidewalks that includes ensuring that the most heavily used pedestrian routes are cleared, including street crossings so that snow plows do not create impassible areas.

Vegetation along trails can be a safety issue. Prevent vegetation from encroaching into walkways. Roots should be controlled to prevent break-up of the surface. Adequate clearances and sight distances should be maintained at driveways and intersections; pedestrians must be visible to approaching motorists.

A regular pruning and maintenance program is recommended. Vegetation and litter, including leaves and branches, should be removed on a regular basis. A checklist of surface repair and vegetation maintenance items should include:

- Frequent inspection of walkways for surface irregularities
- Responding to citizen complaints in a timely manner

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- Repairing potential hazardous conditions immediately
 - Performing preventative maintenance operations, such as keeping drains in operating condition and cutting back intrusive tree roots
 - Sweeping of a project area after repair to any surface
 - Cutting back vegetation to prevent encroachment in the path's clear zone

If a millage is considered to fund certain routes some of the money allocated in an annual budget should be reserved for routine maintenance. Maintenance is an on-going expense that should be discussed and the governmental body needs to decide what level of maintenance will be required to do an adequate job of maintaining the Hike & Bike Plan. Maintenance costs may also be associated with on-road facilities. (paved shoulders/bike lanes) The Road Commission suggests a cost sharing system for maintenance and construction purposes.

Another option for providing maintenance funds is through an endowment fund. For example, a \$1,000,000 endowment invested at 10% would yield \$100,000 annually which could be used for maintenance. If the amount used annually was reduced to \$90,000, the remaining \$10,000 could be reinvested to increase the size of the endowment. This increase would allow the annual yield to increase over time to account for rising maintenance costs due to inflation.

PLAN AMENDMENT PROCESS

The Hike & Bike Plan should be reviewed and updated every five years by the board and their consultant. The Friends of Harbor Country Trails may want to update portions of the Plan even more often when easements or agency approvals are needed. The approved Plan may be amended at any time during the five-year period to reflect significant changes in community conditions, needs or changes in obtaining the rights to construct certain routes. Any change to the Plan should be presented at a public meeting.

At a minimum, amendments or updates should include the following:

- Review current base information and inventory changes such as new developments that have taken place since the adoption of the Hike & Bike Plan or the last revision.
- Public Input - This should include a description of the public involvement process in the report, at least one public meeting, electronic and newspaper announcement 10 days prior to the public meeting and meeting minutes.
- Adoption of the change(s) by the Friends of Harbor Country Trails.
- Discuss new technology for construction methods and materials.
- Update implementation costs based on inflation and priority adjustments.
- Review progress of securing easements or newly acquired public properties.
- Review and evaluate overall connectivity to destination points such as parks, schools, neighborhoods and commercial areas, adjacent communities and public land.
- Review and discuss possible funding opportunities; public and private.
- Document local adoption of the amendments or updates to the Hike & Bike Plan
- Develop a written summary indicating what aspects of the Hike & Bike Plan have been revised and why the changes were made.
- Communicate and distribute the revised amendments to the general public and other public agencies.

CONCLUSIONS

The efforts of the Steering Committee and all public agencies, including the input received from the general public have resulted in a Hike & Bike Plan that is consistent with the needs and wants of the communities included in

the study area. The map generated by these efforts shows an evolving network of non-motorized transportation methods to encourage physical activity, regional connectivity and accessibility to all sectors of the study area.

In conclusion, the Hike & Bike Plan should be used as a planning tool and the implementation process should begin as soon as possible to realize the goals set forth in the Hike & Bike Plan. Utilize the following action steps to realize these goals:

- Begin the process of obtaining public & private easements
- Embrace working with other agencies to obtain the Hike & Bike Plan goals
- Work with the public to implement the non-motorized transportation routes as identified in the Hike & Bike Plan.
- Identify specific projects for implementation
- Explore funding opportunities and begin applying for State and Federal grant funding
- Implement a pilot project for promotion and evaluation (Economic Development as well as Recreation)

The Hike & Bike Plan has been generated over a period of several months with much planning, study and input. We would therefore like to thank the following agencies and committees for their input, cooperation, support and commitment to the Hike & Bike Plan:

- The Pokagon Fund
- Friends of Harbor Country Trails Steering Committee
- City of New Buffalo
- New Buffalo Township
- Chikaming Township
- Chikaming Open Lands
- Chikaming Senior Center
- Three Oaks Township
- Village of Three Oaks
- Village of Michiana
- Village of Grand Beach
- Berrien County Road Commission
- Berrien County Drain Commission
- Michigan Department of Transportation
- Michigan Department of Natural Resources
- Northwestern Indiana Regional Planning Commission
- Southwest Michigan Regional Planning Commission
- River Valley School District
- New Buffalo School District

PART TWO: SUPPLEMENTAL INFORMATION

OPINION OF COST - PRIORITY PLAN

SECTION 1 - FLYNN ROAD					
SITE WORK MISC.					
Mobilization	1	LSUM	\$ 3,000.00	\$	3,000.00
Site Restoration	1	LSUM	\$ 40,000.00	\$	40,000.00
Traffic Control	1	LSUM	\$ -	\$	4,000.00
			Subtotal	\$	47,000.00
DEMO & SITEWORK					
5' paved shoulder both sides of road - medium grading, asphalt, aggregate, striping, etc.	76,267	LF	\$ 20.00	\$	1,525,340.00
			Subtotal	\$	1,525,340.00
OTHER SITE AMENITIES					
Signs (one per mile on each side of road)	14	EA	\$ 300.00	\$	4,200.00
			Subtotal	\$	4,200.00
			SUBTOTAL	\$	1,576,540.00
			10% CONTINGENCY	\$	157,654.00
			15% DESIGN FEE	\$	236,481.00
			CONSTRUCTION TOTAL	\$	1,970,675.00

SECTION 2 - US 12					
SITE WORK MISC.					
Mobilization	1	LSUM	\$ 4,000.00	\$	4,000.00
Site Restoration	1	LSUM	\$ 55,000.00	\$	55,000.00
Traffic Control	1	LSUM	\$ -	\$	7,000.00
			Subtotal	\$	66,000.00
DEMO AND SITEWORK - 8' SHOULDERS & SHARED USE PATH					
8' paved shoulder both sides of road - grading, asphalt, aggregate, striping, etc.	95,040	LF	\$ 45.00	\$	4,276,800.00
8-10' shared use path - grading, asphalt, aggregate, striping, etc.	47,520	LF	\$ 70.00	\$	3,326,400.00
			Subtotal	\$	7,603,200.00
DEMO & SITE PREPARATION					
Demo and Site Prep - East section US12 in Three Oaks - grading, remove asphalt, curb and gutter, vegetation, and relocate lights	2,053	LF	\$ 105.00	\$	215,565.00
Demo and Site Prep - Center section US12 in Three Oaks - grading, remove asphalt, curb and gutter, vegetation, relocate lights and amenities	2,640	LF	\$ 96.00	\$	253,440.00
Demo and Site Prep - West section US12 in Three Oaks - grading, remove asphalt, vegetation, relocate lights	2,640	LF	\$ 80.00	\$	211,200.00
			Subtotal	\$	680,205.00
SITE WORK					
Sitework - East section US12 in Three Oaks - place asphalt, curb and gutter, 5' wide 4" walk on one side, striping	2,053	LF	\$ 82.00	\$	168,346.00
Demo and Site Prep - Center section US12 in Three Oaks - place asphalt, curb and gutter, striping	2,640	LF	\$ 57.00	\$	150,480.00
Demo and Site Prep - West section US12 in Three Oaks - place asphalt, curb and gutter, 5' wide 4" walk on both sides, striping	2,640	LF	\$ 107.00	\$	282,480.00
Storm Sewer Up-grades	0	EA	\$ -	\$	-
			Subtotal	\$	601,306.00
OTHER AMENITIES					
Signs	9	EA	\$ 300.00	\$	2,700.00
8" Schedule 40 PVC Pipe - Drain pipe perpendicular to shared use path - 1 per mie	80	LF	\$ 18.00	\$	1,440.00
			Subtotal	\$	4,140.00
			SUBTOTAL	\$	8,954,851.00
			10% CONTINGENCY	\$	895,485.10
			15% DESIGN FEE	\$	1,343,227.65
			CONSTRUCTION TOTAL	\$	11,193,563.75

SECTION 3 - RED ARROW HIGHWAY**SITE WORK MISC.**

Mobilization	1	LSUM	\$ 5,000.00	\$ 5,000.00
Site Restoration	1	LSUM	\$ 24,000.00	\$ 24,000.00
Traffic Control	1	LSUM	\$ -	\$ 10,000.00
Subtotal			\$	39,000.00

DEMO & SITEWORK

8' paved shoulder both sides of road - medium grading, asphalt, aggregate, striping, etc.	106,187	LF	\$ 45.00	\$ 4,778,415.00
8' shared use path - medium grading, asphalt, aggregate, striping, etc.	71,280	LF	\$ 70.00	\$ 4,989,600.00
Subtotal			\$	9,768,015.00

OTHER AMENITIES

Signs	27	EA	\$ 300.00	\$ 8,100.00
Pedestrian Bridge - 20' long 12' wide with wood	3	EA	\$ 30,000.00	\$ 90,000.00
Subtotal			\$	98,100.00

SUBTOTAL \$ 9,905,115.00**10% CONTINGENCY \$ 990,511.50****15% DESIGN FEE \$ 1,485,767.25****CONSTRUCTION TOTAL \$ 12,381,393.75****SECTION 4 - NEW BUFFALO****SITE WORK MISC.**

Mobilization	1	LSUM	\$ 3,500.00	\$ 3,500.00
Site Restoration	1	LSUM	\$ 26,000.00	\$ 26,000.00
Traffic Control	1	LSUM	\$ -	\$ 20,000.00
Subtotal			\$	49,500.00

DEMO & SITEWORK

Site Prep & Sitework - 5' paved shoulder	62,187	LF	\$ 20.00	\$ 1,243,740.00
Bike Lanes - Striping	32,267	LF	\$ 5.00	\$ 161,335.00
Site Prep and Sitework - 5' walks	50453	LF	\$ 33.00	\$ 1,664,949.00
Subtotal			\$	3,070,024.00

OTHER AMENITIES

Signs	10	EA	\$ 300.00	\$ 3,000.00
Subtotal			\$	3,000.00

SUBTOTAL \$ 3,122,524.00**10% CONTINGENCY \$ 312,252.40****15% DESIGN FEE \$ 468,378.60****CONSTRUCTION TOTAL \$ 3,903,155.00****SECTION 5 - LAKESHORE****SITE WORK MISC.**

Mobilization	1	LSUM	\$ 4,000.00	\$ 4,000.00
Site Restoration	1	LSUM	\$ 900.00	\$ 900.00
Traffic Control	1	LSUM	\$ 200.00	\$ 800.00
Subtotal			\$	5,700.00

DEMO & SITEWORK

Site Prep & Sitework - 8' Asphalt path	1,760	LF	\$ 70.00	\$ 123,200.00
Property Acquisition	1	LSUM	\$ 10,000.00	\$ 10,000.00
Subtotal			\$	133,200.00

OTHER AMENITIES

Signs	1	EA	\$ 300.00	\$ 300.00
Subtotal			\$	300.00

SUBTOTAL \$ 139,200.00**10% CONTINGENCY \$ 13,920.00****15% DESIGN FEE \$ 20,880.00****CONSTRUCTION TOTAL \$ 174,000.00**

FUNDING OPPORTUNITIES

MICHIGAN NATURAL RESOURCES TRUST FUND (MNRTF)

The MNRTF is available through the MDNR, to any local unit of government, including school districts, or any combination of units in which authority is legally constituted to provide recreation. These funds can be utilized to acquire land for outdoor recreation, natural resources protection, and to develop outdoor recreational facilities including trailways. The MNRTF is supported by revenue interest accrued from oil and gas exploration and sales from state land.

Based on grant funding from previous years, there may be as much as 20 to 25 million dollars available for MNRTF grants in the next few years. No more than 25% of the grant funds allotted each year can be awarded to development projects. The maximum development grant is \$500,000 and the minimum is \$15,000. There is no minimum or maximum for acquisition grants. A 25% match for either acquisition or development projects is required from local applicants; however, a 50% match is more common due to increased competition. This match can be either cash, donations of labor and/or materials, force account labor using the applicants work force, or any combination thereof.

Grant applications under the MNRTF are calculated and scored by the MDNR Grants Management Section (GMS).

Projects that meet one or more of the special initiatives will be given additional points. The MNRTF grant award recommendations are prepared by the GMS Board. The Board's recommended applications are then submitted to the Legislature for approval and appropriation of funds before grants can be issued. Development grant applications are accepted each year no later than April 1. Acquisition grant applications are accepted no later than April 1 and again no later than August 1.

Applicants applying for the MNRTF grant are required to have a current community recreation plan approved by the MDNR. The plan must demonstrate the need for the project designated in the MNRTF application. To be eligible for grant funding in "Round 1," new recreation plans or plan revisions must be submitted to the MDNR for review in February and must have MDNR approval by March. To be eligible for grant funding in "Round 2," new plans or revisions must be submitted for review by July and must have MDNR approval by August. For more information regarding the MNRTF, please refer to the web site: www.michigan.gov/dnr-grants.

SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A LEGACY FOR USERS (SAFETEA-LU)

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). With guaranteed funding for highways, highway safety, and public transportation totaling \$244.1 billion. SAFETEA-LU represents the largest surface transportation investment in our Nation's history. The two landmark bills that brought surface transportation into the 21st century—the "Intermodal Surface Transportation Efficiency Act of 1991" (ISTEA) and the "Transportation Equity Act for the 21st Century" (TEA-21)—shaped the highway program to meet the Nation's changing transportation needs. SAFETEA-LU builds on this firm foundation, supplying the funds and refining the programmatic framework for investments needed to maintain and grow our transportation infrastructure.

SAFETEA-LU addresses the many challenges facing our transportation system today – challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity and protecting the environment – as well as laying the groundwork for addressing future challenges. SAFETEA-LU promotes more efficient and effective Federal surface transportation programs by focusing on transportation issues

of national significance, while giving State and local transportation decision makers more flexibility for solving transportation problems within their communities. Visit the SAFETEA-LU website at www.michigan.gov/saftealu for more information on all programs offered. The SAFETEA-LU program has expired but was extended for 30 days. It is now pending new legislation along with the Livable Communities legislation which also addresses non-motorized transportation.

SAFETEA-LU maintains a core program focused on transportation infrastructure while targeting specific examples such as:

SAFETY

SAFETEA-LU establishes a new core Highway Safety Improvement Program that is structured and funded to make significant progress in reducing highway fatalities. It creates a positive agenda for increased safety on our highways by almost doubling the funds for infrastructure safety and requiring strategic highway safety planning, focusing on tangible results. Other programs target specific areas of concern, such as work zones, older drivers and safe routes for pedestrians.

SAFE ROUTES TO SCHOOL (SR2S)

SR2S was enacted as part of the SAFETEA-LU in August of 2005. The statute authorizes \$612 million nationwide for a 5-year period ending in September, 2009. Michigan's allocation totals \$19 million, with 5 annual apportionments. The SR2S program is administrated by the Office of Transportation Economic Development and Enhancement (TEDE) a division of MDOT.

Eligible recipients include state, local and regional agencies including nonprofit organizations. SR2S is 100% federally funded and no matching funds are required. Infrastructure projects must be in a 2-mile range of the school. In Michigan, a school-based planning process must be completed as a prerequisite for funding.

Visit Michigan's SR2S web site at www.saferoutesmichigan.org for information on the required planning process and for the status of application guidance.

ENVIRONMENTAL STEWARDSHIP

SAFETEA-LU retains and increases funding for environmental programs of TEA-21 and adds new programs focused on the environment, including a pilot program for non-motorized transportation and Safe Routes to School. SAFETEA-LU also imposes significant environmental requirements on the Statewide and Metropolitan Planning process. Visit www.michigan.gov/saftealu/factsheets/envirostewardship.htm for more information.

CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT (CMAQ)

The CMAQ program, has been reauthorized through SAFETEA-LU at a funding level of \$8.6 billion through 2009. This program provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available for areas that do not meet the National Ambient Air Quality Standards (nonattainment areas) as well as former nonattainment areas that are now in compliance (maintenance areas). The formula for distribution of funds considers an area's population by county and the severity of its ozone and carbon monoxide problems within the nonattainment or

maintenance area. SAFETEA-LU requires the Secretary to evaluate and assess the effectiveness of a representative sample of CMAQ projects and maintain a database. CMAQ funds are applied through local planning agencies and administered through MDOT. Visit www.fhwa.dot.gov/factsheets/cmaq.htm for more information.

RECREATIONAL TRAILS

A total of \$370 million is provided through 2009 to continue this program to develop and maintain trails for recreational purposes that include pedestrian, equestrian, bicycling and non-motorized snow activities as well as off-road motorized vehicle activities. New criteria allows for construction and maintenance of equipment, real estate costs, educational programs, State administration, and assessment of trail conditions. Funds are applied for and administered through MDOT. Visit www.fhwa.dot.gov/saftealu/factsheets/rectrails.htm for more information.

TRANSPORTATION ENHANCEMENT PROGRAM (TE)

The Transportation Enhancement (TE) Program was established with the passage of the ISTEA of 1991, reauthorized in 1998 in TEA-21 and again in 2005 under SAFETEA-LU. 10% of Surface Transportation Program (STP) funds are set aside which is about \$20-25 million annually. This program is administered through MDOT and the Office of Economic Development (OED). Eligible activities include non-motorized transportation, transportation aesthetics, historic preservation and water quality & wildlife. TE requires a match of at least 20% of the project cost and the project must be related to surface transportation. Visit www.michigan.gov/tea for more information.

TRANSPORTATION, COMMUNITY AND SYSTEM PRESERVATION PROGRAM (TCSP)

The TCSP is intended to address the relationships among transportation, community, and system preservation plans and practices and identify private sector-based initiatives to improve those relationships. State and local governments, metropolitan planning organizations (MPOs), and tribal governments are eligible for discretionary grants, authorized at \$270 million through 2009, to carry out eligible projects to integrate transportation, community, and system preservation plans and practices. Funds must be equitably distributed to a diversity of populations and geographic regions. A local match is required in accordance with section 120(b) of title 23, United States Code. Related is a new Community Enhancement study, funded at \$2 million from TCSP funds, which will examine the impact of well-designed transportation projects on communities. Visit www.fhwa.dot.gov/saftealu/factsheets/tcsp.htm for more information.

NON-MOTORIZED TRANSPORTATION PILOT

SAFETEA-LU establishes a new program, authorized at a total of \$100 million through 2009, to fund pilot projects to construct a network of non-motorized transportation infrastructure facilities. The purpose is to demonstrate the extent to which walking and bicycling can represent a major portion of the transportation solution in certain communities.

The SAFETEA-LU typically funds enhancement projects that occur in the spring or fall depending on the availability of funding. At that time, the deadlines for application submittals are announced. This program was recently extended for an additional six years. Applications must be submitted by an Act 51 agency. Applicants can apply for funding with a match as low as 20% for your application to receive full consideration. However, a larger match will increase the likelihood of receiving funding. All applications must be reviewed and approved by the MDOT MPO. Visit www.fhwa.dot.gov/saftealu/factsheets/nonmotorized for more information.

SCENIC BYWAYS PROGRAM

The Scenic Byways Program offers grant money to be used for the construction of facilities for pedestrians and bicyclist along scenic highways. SAFETEA-LU authorizes the use of federal funds to identify and designate federal, state, and local scenic byways. The byways are typically back roads and are intended to showcase areas of great beauty or history. For more information visit www.byways.org/grants/index.html.

RECREATIONAL TRAILS PROGRAM

The Recreational Trails Program is administered by the Michigan Department of Natural Resources. Funds are used to renovate and develop recreational trails and trail facilities for both non-motorized and motorized recreation. Local unit of government-sponsored projects can be considered for funding if they contribute to DNR program goals and are located on DNR land. Applications must be developed as a joint application with a DNR division. For more information contact Mark Mandenberg with the MDNR at mandenbm@michigan.gov.

SECTION 10K OF PUBLIC ACT 51 OF 1951

Michigan's transportation law (MCLA 247.660k) reserves 1% of state transportation funds for nonmotorized transportation. Any improvement in a road, street, or highway, which facilitates nonmotorized transportation is considered a qualified nonmotorized facility for the purpose of this section. For more information contact the Nonmotorized Coordinator with the Bureau of Transportation Planning at MDOT.

RECREATION IMPROVEMENT FUND

The Recreational Improvement Fund is administered by the Michigan Department of Natural Resources. Funds are used to renovate and develop recreational trails and trail facilities for both non-motorized and motorized recreation. Local unit of government-sponsored projects can be considered for funding if they contribute to DNR program goals and are located on DNR land. Applications must be developed as a joint application with a DNR division. For more information contact Mark Mandenberg with the MDNR at mandenbm@michigan.gov.

LAND AND WATER CONSERVATION FUND (LWCF)

This federal program, administered by the MDNR, funds the planning, acquisition, and development of land for federal and non-federal (known as "state-side") outdoor recreation. In 2003, this program was re-initiated totaling \$4 million per year. State agencies and local municipalities are eligible for state-side LWCF funds. These funds can generally be used to acquire land, build or repair recreation or park facilities, provide riding and hiking trails, enhance recreational access, and provide wildlife and hunting areas. The program matches up to 50% of the cost of a project. Visit www.michigan.gov/dnr/0,1607,7-153-10366_37984_37985-125326--,00.html for more information.

THE ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)

The purpose of the EECBG is to assist eligible entities in implementing energy efficiency and conservation strategies. The main goal of the block grant is to reduce fossil fuel emissions created as a result of activities within the jurisdiction of eligible entities and to reduce total energy use by improving energy efficiency in the transportation, building and other appropriate sectors. Eligible activities include but are not limited to: developing/implementing an energy efficiency and conservation strategy; retaining technical consultant services to assist in the development of such a strategy; and, developing/implementing programs to conserve energy used in transportation.

For example, flex time by employees, satellite work centers, promotion of zoning requirements that promote energy efficient development, transportation infrastructure: bike lanes/pathways, pedestrian walkways and synchronized traffic signals. As of the printing of this report, the Michigan government was making approximately 19.6 million dollars available through the EECBG for non-entitlement cities and counties. In the current economic climate, however, the possibility of an extension of current funding opportunities or access to new funding may become less attainable. The Friends of Harbor Country Trails should stay current on public and private funding opportunities. Visit www.eecbg.energy.gov for more information.

AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA)

The ARRA was enacted to spur job creation and economic development. After passage of ARRA, the federal government began allocating funding to states and localities to begin economic stimulus projects in the areas of education, housing, health care, infrastructure, and renewable energy. State and local governments have received stimulus funding and are now awarding contracts, grants, and loans for projects that will create employment opportunities and promote economic growth in local communities however, many federal agencies still have untapped funding available for stimulus projects.

FEDERAL TRANSIT AUTHORITY (FTA) TRANSIT INVESTMENT IN GREENHOUSE GAS AND ENERGY REDUCTION (TIGGER)

The ARRA made available 100 million dollars for a discretionary program to support local transit capital projects that resulted in the reduction of greenhouse gases or energy use. Contact the www.fta.dot.gov/index_9440_9917.html for more information.

LOCAL FUNDING SOURCES

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AND CAPITAL IMPROVEMENTS PROGRAM (CIP)

Nonmotorized improvements, especially those located within road right-of-ways, are likely to be funded as incidental parts of larger transportation projects. These nonmotorized improvements should qualify for the same transportation funds as the rest of the roadway project.

PARKS AND RECREATION BUDGETS

Trailway funding can come from budgets of willing agencies. This includes local and county parks and recreation departments, or the MDNR Parks and Recreation Division.

DOWNTOWN DEVELOPMENT AUTHORITIES

DDA districts are defined that qualify for TIF (Tax Increment Financing) and other special funding formulas. The public infrastructure improvements that are part of downtown revitalization often include pedestrian facilities and amenities. Bicycle facilities could be accomplished within these infrastructure improvements.

MILLAGES, BONDS, AND ASSESSMENTS

Local, county, or state millages and bond issues may be passed by voters or governing bodies. Numerous Michigan communities have millages for park operations, maintenance, development, and land acquisition. This can be one of the most effective approaches for funding local trailways.

UTILITY LEASES

Public greenway/trailway corridors can obtain lease revenue from compatible uses, such as buried pipelines or communication lines. There can be one-time payments for acquisition or development or annual payments for operation and maintenance.

PRIVATE FUNDING SOURCES

- American Greenways Dupont Awards Program.....www.conservationfund.org
-Provides funding for mapping, conducting ecological assessments, surveying land, hosting conferences, developing brochures, producing interpretive displays, incorporating land trusts and building trails.
- Recreational Equipment Incorporated (REI) Environmental Grants.....www.rei.com/aboutrei/grants02.html
-Non-profit organizations eligible by nomination from REI employee. Grants are organized in two areas, conservation grants and outdoor recreation grants.
- Robert Wood Johnson Foundation.....www.rwjf.org
- Seeks to improve health and health care across America.
- The DALMAC Fund.....www.biketcba.org
- Michigan based organization promoting bicycling and bike related projects throughout the state.
- Bikes Belong Coalition.....www.bikesbelong.org
- Funding important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S.
- Guide to Foundation Grants for Rivers, Trails, and Open Space Conservation, 2nd Edition
-Available through National Park Service
- Michigan Foundation Directory.....www.cmif.org
-Directory of private foundations that offer funding sources.
- The Foundation Directory, & The Foundation Directory Part 2.....www.fdncenter.org
-Directory of private foundations that offer funding sources.
- Land Trusts
-National, state, regional, county, and local private land trusts can purchase land for resale to public agencies, buy options to protect land, receive land donations, put together land deals, and provide technical assistance.
- Businesses
-Local businesses are frequent partners in the promotion of nonmotorized transportation and trail projects.
- Friends Groups and Other Organizations
-Friends groups often support a project from inception to implementation.
- Community and Other Foundations
-Established to maintain or aid charitable, educational, religious, or other activities serving the public good.

LOCAL PRIVATE FUNDING SOURCES

Michigan Gateway Community Foundation.....www.mgcf.org

- Provides grants to projects that will benefit South Berrien and Cass Counties, Michigan

Berrien County Community Foundation.....www.berriencommunity.org

- Provides grants to projects that will benefit Berrien County, Michigan

Pokagon Fund Band of Potawatomi Indians.....www.pokagonfund.org

- Provides grants to projects that will enhance the lives of residents in the New buffalo region through the financial support of local governments, nonprofits, charities and other organizations

PUBLIC MEETING SUMMARY

The following is a list of public meetings that were used in the development of the Hike & Bike Plan.

DATE

LOCATION

1. 5/14/2009 New Buffalo Elementary

PURPOSE: LAP presented the preliminary Master Plan to the public and received comments. Possible attractions were discussed and the dangers of using US-12 and Red Arrow Highway due to the lack of bike lanes. The use of the railroad right of way for the trail was also discussed and the need to make a secure and safe trail if this option was explored.

2. 5/14/2009 Three Oaks

PURPOSE: LAP presented the Preliminary Master Plan to the public and received comments. Discussion covered the need of Three Oaks road improvements due to the high use and the possible inclusion of sidewalks in the improvements. Also discussed was which communities along the coast are doing a good job of incorporating non-motorized mixed use trails.

3. 5/15/2009 River Valley

PURPOSE: LAP presented the Preliminary Master Plan to the public and received comments. Included in the discussions was Chikaming's exploration into turning both Union-Pier/Townline and Red Arrow Highway from four down to three lanes. The importance of bike paths from park to park was also covered. And further there was discussion about the back up of traffic at Warren Dunes on the 4th of July, Memorial Day, and Labor Day.

4. 5/16/2009 New Buffalo City Hall

PURPOSE: LAP presented the Preliminary Master Plan to the public and received comments. A four to three lane conversion of Buffalo Street was discussed as well as a new turn signal to move traffic through the area. The need for sidewalks along both Mechanic Street and Whittaker Street and possibly making Barton and Thompson Streets one way in either direction to relieve traffic congestion was also covered.

5. **5/16/2009** **Chikaming Township Hall**

PURPOSE: LAP presented the Preliminary Master Plan to the public and received comments. Discussion included the connection location for Warren Dunes due to high summer traffic and the need to move the bike route on Browntown Road north or south around the garden center in Sawyer due to traffic congestion created by the high number of patrons, then return to Browntown Road after Flynn Road. Also, there was some discussion about using the railroad right of way for the trail.

6. **8/6/2009** **New Buffalo High School**

PURPOSE: LAP presented the Priority Plan to the public and received comments. Discussion included minor revisions to the plan and the next steps in presenting the plan to the individual local governments.

7. **8/7/2009** **Chikaming Township Hall**

PURPOSE: LAP presented the Priority Plan to the public and received comments. Discussion included minor revisions to the plan and the next steps in presenting the plan to the individual local governments.

STEERING COMMITTEE MEETING SUMMARY

The following is a list of steering committee meetings that were used in the development of the Harbor Country Hike & Bike Plan.

	DATE	LOCATION
--	-------------	-----------------

- | | | |
|----|------------------|--------------------|
| 1. | 1/30/2009 | New Buffalo |
|----|------------------|--------------------|

PURPOSE: Review of committee responsibilities and goals. LAP presented findings of inventory using maps created during the inventory process and committee members gave comments. LAP then presented the Non-Motorized “toolkit,” a series of various trail components and implementation methods to apply appropriate trail types to context.

- | | | |
|----|------------------|--------------------|
| 2. | 3/25/2009 | New Buffalo |
|----|------------------|--------------------|

PURPOSE: LAP presented the vision plan and spoke about the major destinations and general connections the plan is trying to make. LAP then presented the system plan, discussing the creation of loops to accommodate families and recreational users and a presentation discussing how the Lakeshore Drive area could be handled. A presentation to the public of the plan was agreed upon as the next step.

- | | | |
|----|------------------|--------------------|
| 3. | 6/26/2009 | New Buffalo |
|----|------------------|--------------------|

PURPOSE: LAP presented a revised master plan derived from public workshops pointing out added routes, destinations, and other public suggestions. A priority plan was then presented by LAP and the rationale explained for connecting the primary goals of New Buffalo, Three Oaks, and Sawyer. It was agreed the priority plan was conceptually ready for public presentation and a general time of the beginning of August was determined.

- | | | |
|----|-------------------|---------------------------|
| 4. | 11/20/2009 | Chikaming Township |
|----|-------------------|---------------------------|

PURPOSE: LAP presented the report and the process by which it was developed. Changes to the draft report were highlighted and additional comments were collected. LAP explained the role of the Friends of Harbor Country Trails from this point forward and also the roll of local governments involved. The report was still under review by local governments at this time and minor revisions to the report are necessary once the review are complete.

- | | | |
|----|-------------------|---------------------------|
| 5. | 12/15/2009 | Chikaming Township |
|----|-------------------|---------------------------|

PURPOSE: LAP met with the committee to establish target projects and outline an action plan to discuss how these projects could be implemented.

SURVEY FORM

Harbor Country PATHWAYS AND BIKEWAYS OPINION SURVEY

INTRODUCTION

As part of a continuing planning effort to improve transportation in Harbor Country, the Friends of Harbor Country Trails group has hired a planning firm to study pathways and bikeways within this area. These elements make up a non-motorized transportation network. The following is an informal questionnaire that will help the planners obtain input. The planners will use this information as one of many tools to assist in making recommendations for future improvements. The completed study will be used to apply for state and federal funding as well as other applicable grants.

Please PRINT your responses clearly.

SOME PLANNING ISSUES TO CONSIDER

- Conflict Areas between pedestrians, bicycles, and automobiles
- Destination Points such as; schools, parks, commercial centers, points of interest
- Problem Intersections
- On Street Conflicts (need of bicycle lanes, sidewalks, usually within the public road area, etc.)
- Off Street Needs (need of off street paths and trails, usually outside the public road area)

PLEASE PRINT ALL RESPONSES CLEARLY SO WE CAN READ THEM.

1. Where do you reside?

_____ City of New Buffalo _____ New Buffalo Twp. _____ Chikaming Twp.

_____ Three Oaks Twp. _____ Village of Three Oaks _____ Other

If you live outside the areas above _____ North _____ South _____ East _____ West

1A. Address

_____ City _____ Zip _____

2. Which of the following non-motorized activities do you participate in? (check all that apply and comment if appropriate).

ACTIVITY	How many times per week do you perform the activity? (1, 2, 5, etc.)	How far do you travel on an average outing? (1/4, 1/2, 1 mile, etc.)
_____ Walking	_____	_____
_____ Bicycling	_____	_____
_____ Run / Jogging	_____	_____
_____ Roller Blading	_____	_____
_____ Skate Boarding	_____	_____
_____ Dog Walking	_____	_____
_____ Commute to Work	_____	_____
_____ Other	_____	_____

How often do you use it per week?_____ How far on average do you travel?_____

3. **Where do you do the activities** asked in question 2 above? Provide a description of the route you travel during your outings, or the parks/places that you visit when you do the activities. List roads, parks, and or public/private destinations. Use back of page if necessary. (PLEASE PRINT)

4. **What are your impressions of the existing PEDESTRIAN system?** (sidewalks, pathways, intersections, trails, etc.) (CHECK ONE)

- _____ Excellent (no problems)
- _____ Good (usually can get to destinations without problems)
- _____ Fair (some problems getting to and from destinations)
- _____ Poor (usually difficult to get to and from destinations)
- _____ Terrible (very difficult if not impossible to get around)

5. **If you perceive a PEDESTRIAN problem,** describe the problem and the location. If multiple locations, please list as many as you can. Use the back of the page if necessary. (PLEASE PRINT)

6. **What would you suggest to improve the existing PEDESTRIAN system?** (PLEASE PRINT)

7. **What are your impressions of the existing BICYCLE system?** (bicycle lanes, bike parking, intersections, shared paths, etc.) (CHECK ONE)

- _____ Excellent (no problems)
- _____ Good (usually can get to destinations without problems)
- _____ Fair (some problems getting to and from destinations)
- _____ Poor (usually difficult to get to and from destinations)
- _____ Terrible (very difficult if not impossible to get around)

8. **If you perceive a BICYCLE problem,** describe the problem and the location. If multiple location, please list as many as you can. Use the back of the page if necessary. (PLEASE PRINT)

9. **Where do you think ON-STREET bike lanes should be located?** (list by street name and the nearest street crossing so we know what area you are talking about). Use the back of the page if necessary. (PLEASE PRINT)

10. **Where do you think an OFF-STREET PATHWAY should be located?** (list by street name and the nearest street crossing so we know what area you are talking about). Use the back of the page if necessary. (PLEASE PRINT)

11. **What would you suggest to improve the existing BICYCLE system?** (PLEASE PRINT)

12. **Describe any other concerns you have about the non-motorized transportation system in Harbor Country** (PLEASE PRINT)

13. **Describe any other constructive SOLUTIONS or OPPORTUNITIES you can identify regarding the non-motorized transportation system for the area.** (PLEASE PRINT)

Thank you for participating in our opinion survey. Your input is valued and will be reviewed.

HOW TO CONTACT US FOR MORE INFORMATION

Should you have additional comments or ideas that you think will help our consultants, Landscape Architects & Planners, inc. (LAP), in their attempt to create a meaningful plan, then contact us by any of the following methods:

LAP

Mailing Address:

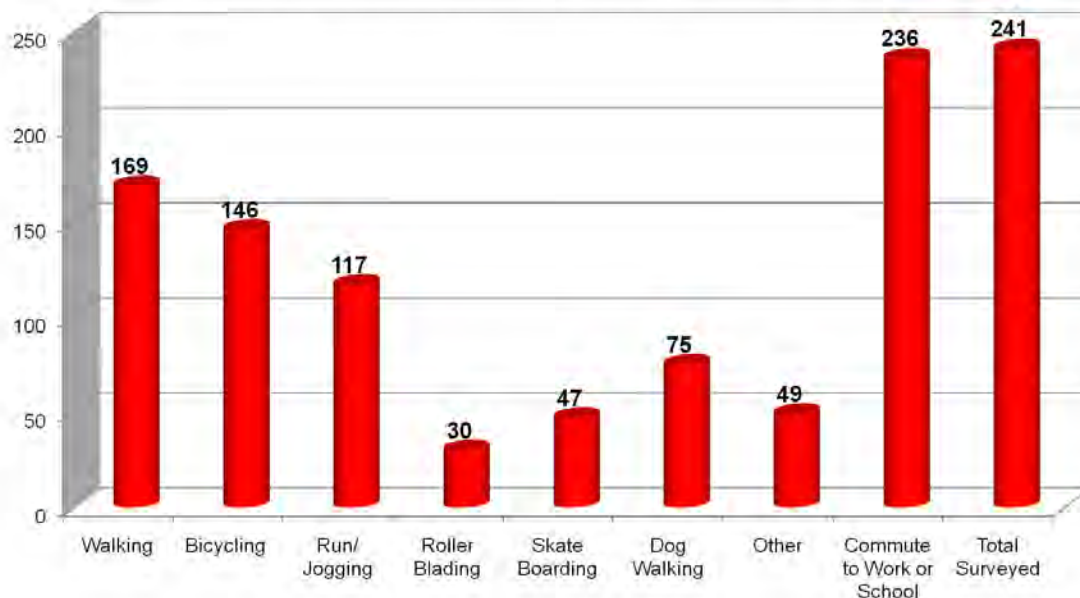
Attn: Robert Ford/Matt Lincoln
809 Center Street, Suite 1
Lansing, MI. 48906

LAP E-mail:

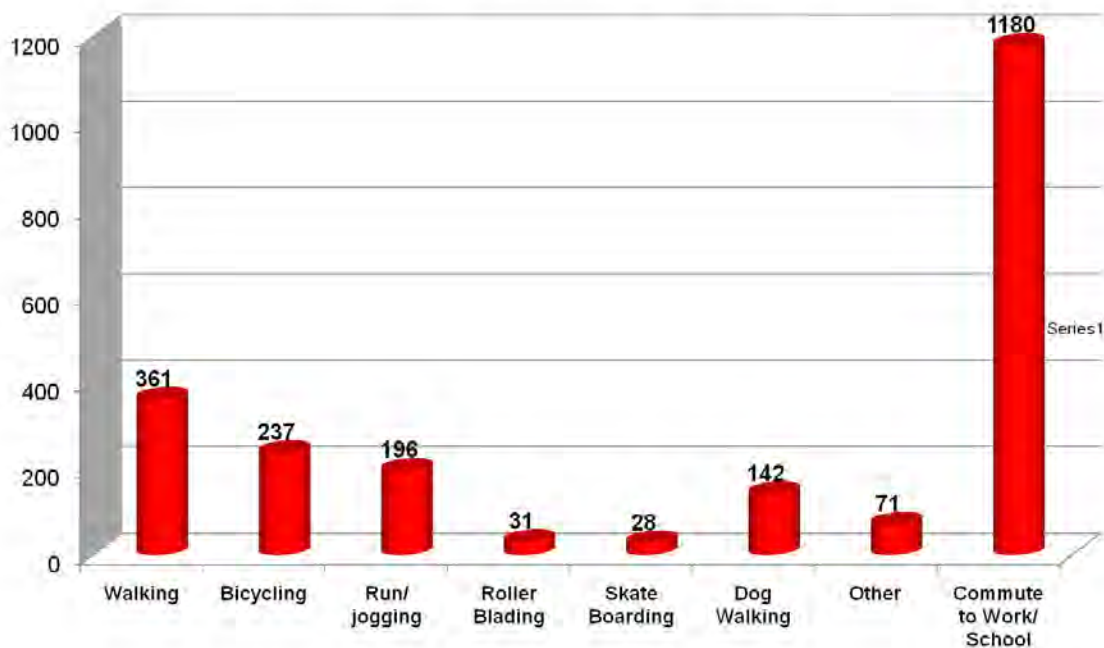
LAP Telephone: (517)485-5500 Fax: (517)485-5576

SURVEY DATA

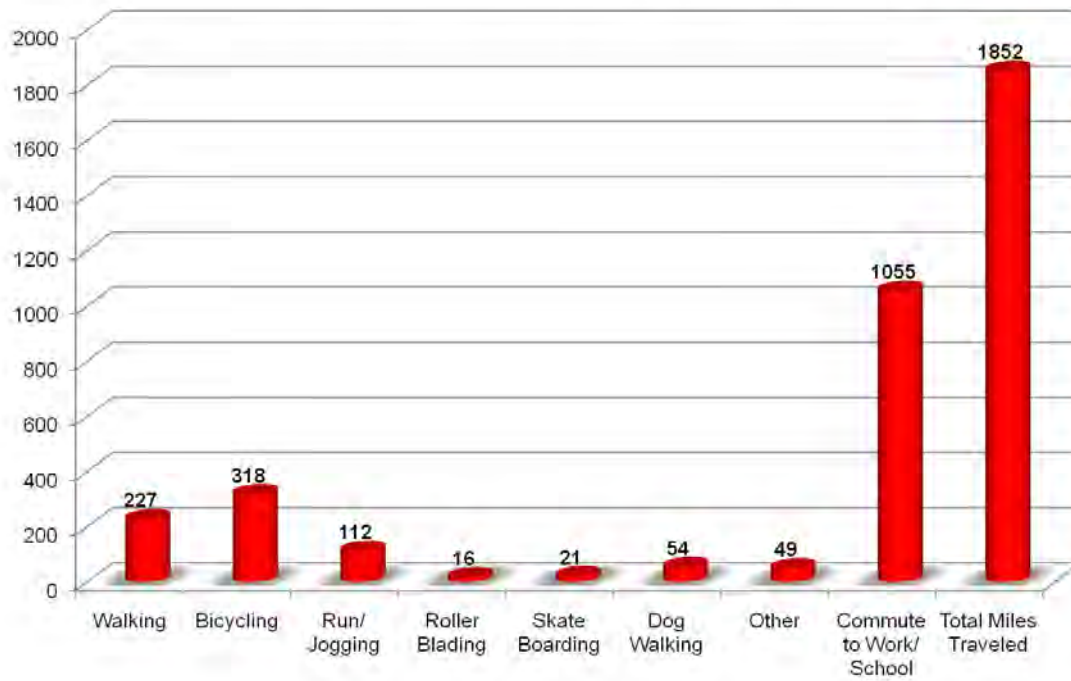
Number of People who partake in non-motorized activities



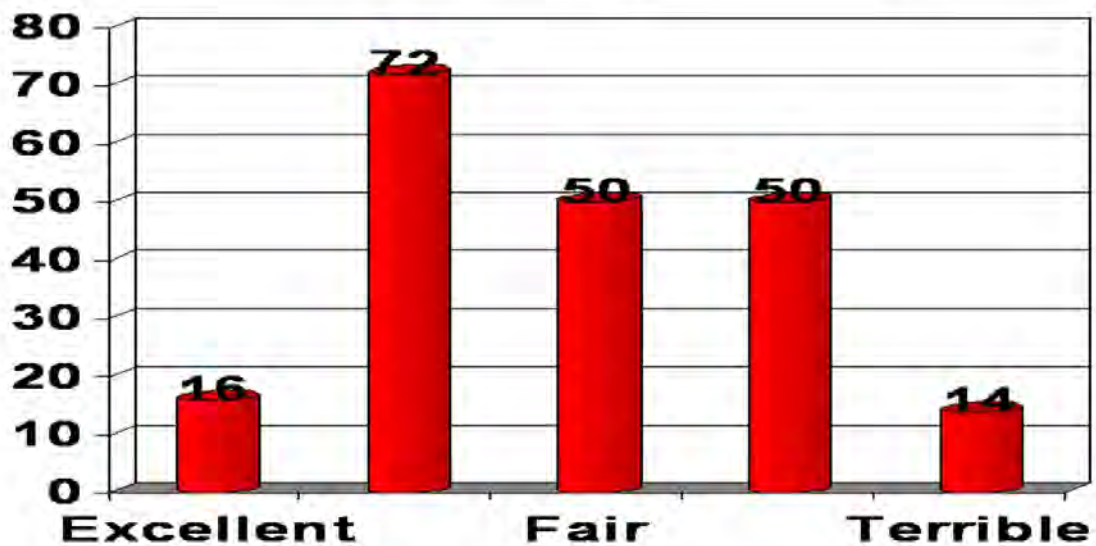
Non-motorized activities: Total Times Per Week



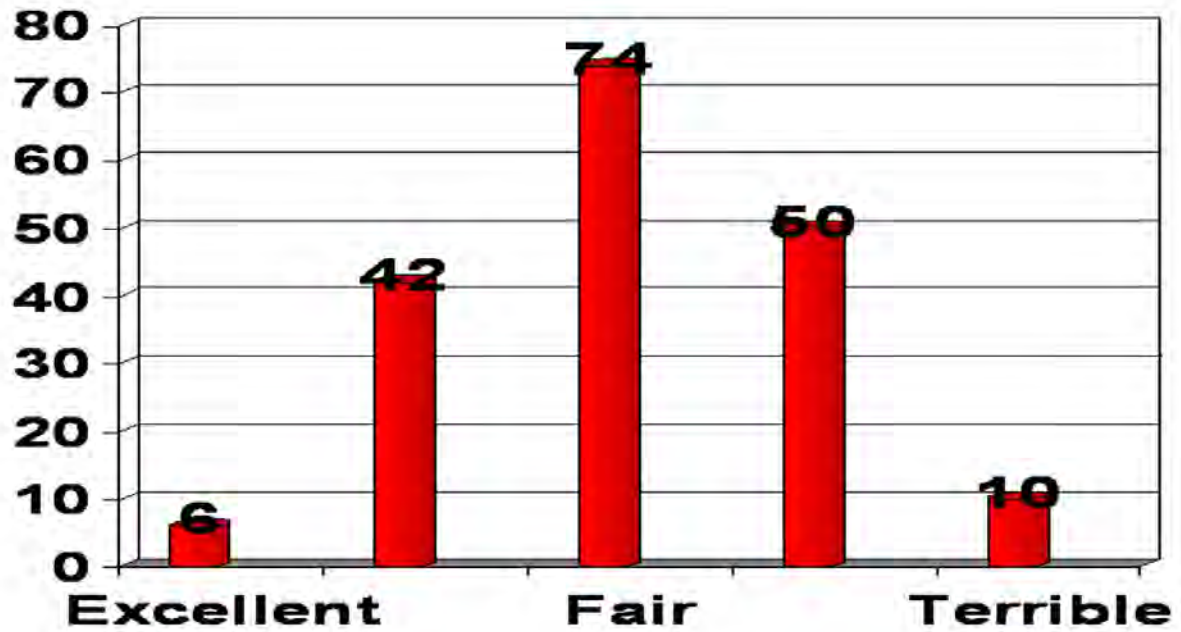
Total Non-Motorized Activity Mileage



Impressions of the Existing Pedestrian System



Impressions of the Existing Bicycle System



PUBLIC MEETING ADVERTISEMENTS

The following advertisements were published in the New Buffalo Times and the Harbor Country News to advertise for the public meetings held:

The Friends of Harbor Country Trails have been working on a Harbor Country Hike & Bike Plan and invite you to see what they've been up to. 5 open houses are scheduled throughout Harbor Country for your convenience...

Thursday, May 14th
New Buffalo Elementary School Cafeteria 2pm – 4pm
Three Oaks Village Hall 6pm – 8pm

Friday, May 15th
River Valley High School Library 2pm – 4pm

Saturday, May 16th
New Buffalo City Hall 9am – 12pm
Chikaming Township Hall 1pm – 3pm

The Friends of Harbor Country Trails have been working on the Harbor Country Hike & Bike Plan and invite you to see what they've been up to. We will be presenting the priority plan and requesting feedback from you. Two times and locations are provided in the area for your convenience...

Thursday, August 6, 2009
New Buffalo High School Building
Media Center (East Entrance) 7:00pm

Friday, August 7th, 2009
Chikaming Township Hall 7:00pm

We hope to see you there!

Postcards were also produced and distributed by the Steering Committee for all public meetings:



STATISTICS

SAFETY STATISTICS

SAFE ROUTES TO SCHOOL (SR2S)

- 30 years ago 66% of children walked to school.
- In 2007 less than 15% of American children walk to school.
- The first Wednesday in October is National walk to school day.
- May is National Bike Month
 - May 15 is National Ride Your Bike to work day
- The first SR2S national program was started in Denmark in the 1970's which had Europe's highest child pedestrian accident rate.
- Over a ten-year period, paths were added, roads narrowed, and traffic islands added.
 - Child pedestrian and cyclist casualties fell by 80%

*Statistics provided by: US Centers for Disease Control and Prevention

1995 - Great Britain had 10 Safe Routes to School projects

- Added bike lanes, traffic calming, and raised crossings.
 - In two years, bike use tripled.
 - Reduced speed zones cut pedestrian casualties by 77% and cycling casualties by 28%

2000 - Marion County, California

- Survey showed that 70% of kids were driven to school, and 26% of morning traffic was for school.
- In 2002 walking and biking rose by 80%

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

- A pedestrian or bicycle injury happens every six to seven minutes.
- 32.1 is the average age of a person involved in a fatality.
- 85% of all pedestrian-vehicle accidents result in a fatality or serious injury.
- In 2005 more than 5,000 people were killed in pedestrian and bike - motor vehicle accidents.
- Motor vehicle accidents are the leading cause of death in children ages 3-6 and 8-14 years old.
- 30% of fatal injuries are ages 5-15
- 41% of non-fatal injuries are ages 5-20

AASHTO

- A person will generally not walk to work a distance greater than one mile.
- A person will generally not walk to catch a bus a distance greater than one-half mile.
- 80% of all pedestrian trips are one-half mile or less.
- The typical pedestrian is a:
 - Shopper 50% of the time
 - Commuter 11% of the time
- Two-Thirds of all accidents occur at intersections.
- Bicyclist riding in areas without bike paths or lanes are nearly twice as likely to feel endangered as bicyclists with paths or bike lanes (mostly by motorists) and more than 4 times as likely to be dissatisfied with how their community is designed for making biking safe.

SIDEWALKS

- 5' width in residential areas
- 5' - 8' in commercial areas
 - 6' for sidewalks
- 8' - 12' minimum width for TEA-21 funding (SAFETEA)

TRAIL STUDIES

372 TRAILS STUDIED ACROSS THE UNITED STATES

- Four separate studies conducted between 1979 and 1997 concluded that trails do not increase crime.
- Out of 372 trails included in this study, The Rails to Trails Conservancy (RTC) found only eleven trails in 1995 and ten in 1996 reported major crime incidences against persons, only 3% of responding trails.
- When trails are compared to roads, parking areas and private places they are safer, according to the RTC.
- Letters from law enforcement officials attest that the actual volume of incidents such as graffiti, littering, sign damage and motorized use were minimal.
- RTC found that the majority of property crimes committed on trails had only a minor effect on the trail and usually did not harm the adjacent private property.
- This letter was submitted by a trail user. "Since the trail was constructed and opened for use we have found that the trail has not caused any inconvenience to property owners along the trail," and "The residents seem to enjoy having the trail near their homes."
- Addressing trail users' safety and trail neighbors' concerns about crime are critical to the creation of a successful trail.
- The RTC report has shown that crime on rail-trails is not a common occurrence.
- "The trail has not caused any increase in the amount of crimes reported. We have found that the trail brings in so many people that it has actually led to a decrease in problems." "The increased presence of people on the trail has contributed to crime being reduced." Charles R. Tennant, Chief of Police, Elizabeth Township, Buena Vista, PA
- Bicyclists are more visible in bike lanes along the road.
- Bike lanes incorporated in the existing roadway system are safer than bicycles riding on the sidewalks because motorists cannot always see bicyclists crossing driveways. Bike lanes also separate the two forms of transportation reducing pedestrian - bike accidents. (United States Department of Transportation, www.fhwa.dot.gov)

Rails to Trails Conservancy - Rail-Trails and Safe Communities, The experience on 372 Trails, 1998, Written by Tammy Tracy & Hugh Morris in cooperation with National Park Service - Rivers, Trails, and Conservation Assistance Program

RAILS TO TRAILS SURVEY FOUND THE FOLLOWING HAVE REGULAR PATROLS

- 69% of urban trails
- 67% of suburban trails
- 63% of rural trails

Patrols of trails are accomplished by:

- 20% local police
- 16% county police
- 9% park rangers
- 4% state police
- 3% volunteers

Patrol Modes:

- 33% car and truck
- 26% bike

Rails to Trails Conservancy - Rail - Trail and Safe Communities, The experience on 372 Trails, 1998, Written by Tammy Tracy and Hugh Morris in cooperation with Nation

BURKE-GILMAN TRAIL IN SEATTLE, WASHINGTON

- Local police officers and residents were interviewed on the 12-mile urban trail.
- Vandalism and burglary rates did not increase as a result of the trail.
- Rate of vandalism and break-ins to adjacent property was well below the neighborhood average.
- Separation from a criminal's vehicle is a primary deterrent to crime.

SUBURBAN RAIL-TRAILS

- Incidents of graffiti and unauthorized motorized usage occurred less frequently on suburban rail-trails than urban trails. The number of suburban trails reporting crimes directly affecting adjacent property owners was significantly lower than the rates of trail vandalism.
- The national rate of suburban burglary is 820 per 100,000 inhabitants; only one suburban trail reported a break-in to adjacent property in 1996 with an estimated 14 million people using more than 1,100 miles on 82 trails.
- 3% of suburban trails reported trespassing.
- 17% of the suburban trails reported graffiti.
- 24% of the trails reported littering.
- 22% of the trails reported sign damage.
- 14% of the suburban trails reported unauthorized usage.

Rails to Trails Conservancy - Rail-Trails and Safe Communities, The experience on 372 Trails, 1998, Written by Tammy Tracy & Hugh Morris in cooperation with National Park Service - Rivers, Trails, and Conservation Assistance Program

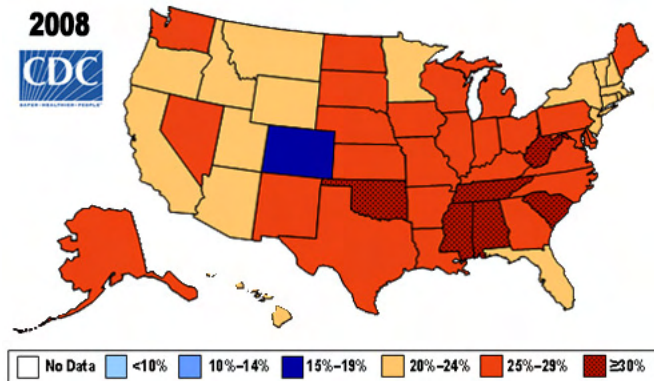
HEALTH STATISTICS

PHYSICAL ACTIVITY STATISTICS

- According to a 2001 national Household transportation study, 50% of all trips are 3 miles or less and 28% are one mile or less, 65% of which are made by Automobile.
- The number of trips the average American adult takes on foot each year dropped 42% between 1975 and 1995. Among children, walking trips dropped 37%. It is estimated that only 10% of public school students walk to school today, compared with a majority of students a generation ago. The most common means of transportation to school is by car.
- In the late 1960s nearly half of the kids walked to school. In 2007, less than 15% of children were walking
- Michigan consistently ranks among the heaviest states.
- The prevalence of overweight children has tripled during the last 20 years.

*Statistics provided by the leadership for active living, supported by the Robert Wood Johnson Foundation

OVERWEIGHT OR OBESITY AMONG ADULTS



Percentage of obese adults by state. (body mass index ≥ 30)

- A 2008 study by the Johns Hopkins Bloomberg School of Public Health suggests if current trends continue, by the year 2030 86% of Americans could be overweight or obese.
 - This could result in 1 of every 6 health care dollars being spent paying for overweight and obesity related treatments.
- Less than half of American adults are regularly active.
- 25% are not active at all.
 - (Rails-to-Trails “benefits of Trail and Greenways”, The Trails and Greenways Clearinghouse, www.trailsandgreenways.org)
- Creating safe Places for people to bicycle and walk is critical to persuading people to become more active.
- Trails provide a safe, inexpensive avenue for regular exercise for people.
 - (U.S. Department of Health and Human Services, Physical Activity and Health)
- 64% of Michigan adults were overweight or obese in 2008. (Body Mass Index ≥ 25)
- Only 50.7 of Michigan adults participated in moderate or vigorous physical activity in 2007.
 - (www.statehealthfacts.org)

OBESITY AMONG CHILDREN AND ADOLESCENTS

- During the past three decades the rate of overweight children has increased in every age category;
 - Ages 6 - 11 has nearly quintupled from 4% - 19%
 - Ages 12 - 19 have more than tripled from 5% - 17%
 - Ages 2 - 5 has nearly tripled from 5% - 14%
- For children born in the U.S. in 2000, the risk of being diagnosed with diabetes during their lives is 33% for males and 39% for females. The risk is directly related to diet and physical activity.
- Approximately 60% of overweight children ages 5 - 10 had at least one physiological risk factor for heart disease and stroke, such as elevated total cholesterol, triglyceride, insulin or high blood pressures. 25% of Overweight children had two or more such risk factors.
 - (Statistics provided by the leadership for healthy communities, supported by the Robert Wood Johnson Foundation)
- 10% of public school students walk to school today, in 1969 42% of children walked to school.
- 46% of all high school students were not even enrolled physical education classes in 2007.
 - (Center for Disease Control, <http://www.cdc.gov/HealthyYouth/physicalactivity/facts.htm>)

U.S. CENTER FOR DISEASE CONTROL AND PREVENTION

- 64% Of the U.S. population is clinically overweight and 31% are considered obese.
- Conditions are due to lack of physical activity.
- Results can include increased heart disease, cancer, diabetes, anxiety, depression and other costly health problems.
 - (Robert Wood Johnson Foundation (www.rwjf.org))
- Trails strengthen a community's ability to attract home buyers.
- Trails provide employers a way to reduce health care costs. (USA Today 10/09/02)
- Prevalence of overweight adolescents has tripled from 5% in 1980 to 15% in 2000.
- In 2007, only about half of men and women in the U.S. were participating in regular physical activity.

PRESIDENTS COUNCIL ON PHYSICAL FITNESS AND SPORTS

- Heart disease is the leading cause of death among men and women in the U.S. Physically inactive people are twice as likely to develop coronary heart disease as regularly active people.
- Only 3 in 10 adults get the recommended amount of physical activity.
- Nearly 108 million Americans are either obese or overweight, meaning roughly 3 of 5 Americans carry an unhealthy amount of excess weight.
- The major barriers most people face when trying to increase physical activity are: time, access to convenient facilities and safe environments in which to be active.

ECONOMIC BENEFITS STATISTICS

- Greenway corridors provide a variety of amenities, such as attractive views, open space preservation, and convenient recreation opportunities.
- This is reflected by increased property values and marketability for property located near open space
- Developers also recognize these values and incorporate open space into planning, designing, and marketing new and redeveloped properties.
- Natural open space and trails are prime attractions for potential home buyers.
 - "American Trails" Web site entitled Benefits of trails and greenways for health, community, economic development, and open space. ([www.americantrails.org/resources/benefits/10 reasons.html](http://www.americantrails.org/resources/benefits/10%20reasons.html))
- Other surveys show property values are higher in areas within proximity to trails and greenways.
- The Burke-Gilman Trail in Seattle, Washington has 4,145 homes, 9,000 acres of land with 6,000 acres set aside as open space and dozens of miles of multi-use trails which link to amenities and a metro-wide system. The lots in developments adjacent to the trail had property values 7 to 15% higher than lots in similar developments not on the trail route. (National Geographic - Sand Rozeboom, Rose and Company)
- Increased participation in moderate physical activity by the 88 million inactive Americans could reduce medical costs by \$76 billion. (Pratt et. al, 2000)

NATIONAL PARK SERVICE STUDY

- In "The Impacts of Rail-Trails," landowners along three rail-trails reported that their proximity to the trails had not adversely affected the desirability or values of their properties.
- Along the suburban Lafayette/Moraga Trail in California, the majority of owners felt that the trail would make their properties sell more easily and add increased value. (National Park Service and Pennsylvania State University, 1992)

A SURVEY OF ADJACENT LANDOWNERS ALONG THE LUCE LINE RAIL-TRAIL IN MINNESOTA

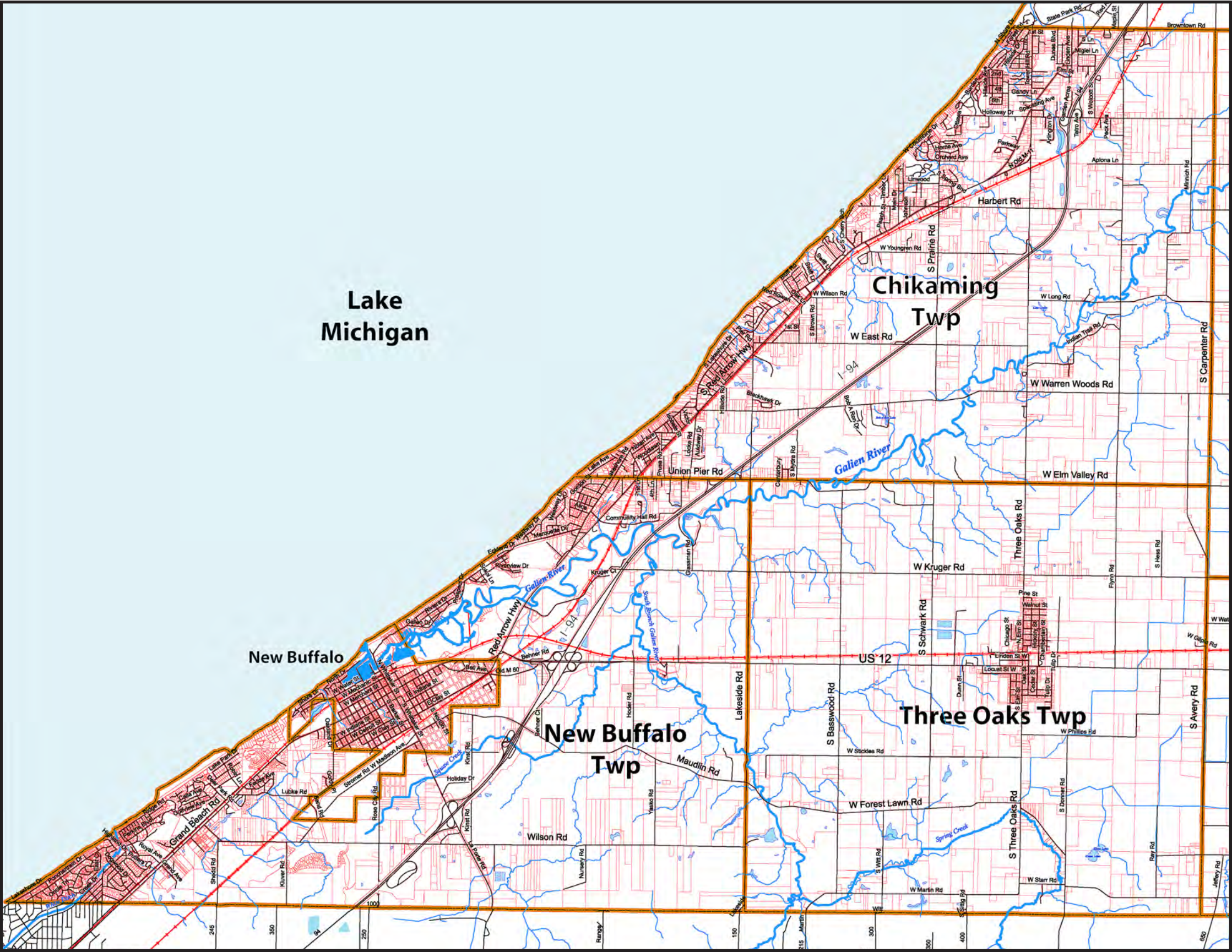
- 87% Believed the trail increased or had no effect on their property value.
- 61% of the suburban residential owners noted an increase in their property value.
- Appraisers and real estate agents claimed that trails were a positive selling point for suburban residential property, hobby farms, farmland proposed for development, and some types of small town commercial property. (mazour, 1988)

A SURVEY BY AMERICAN LIVES, INC.

- According to research conducted for the real estate industry, 77.7% of all home buyers rated natural open space as either “essential” or “very important” in planned communities. Walking and bicycling paths ranked third.

BENEFITS TO NEIGHBORHOODS

- Real Estate values over the next 26 years will rise fastest in mixed-use, walkable communities.
- Greenways increase property values nationwide. (1998 Study by the National Park Service)
- Land next to a greenbelt in Salem, Oregon was worth \$1,200 more per acre than 1,000 feet away.
(1992 Technical Information Series, Scenic America)



LEGEND

-  Parcel
-  Township Boundary

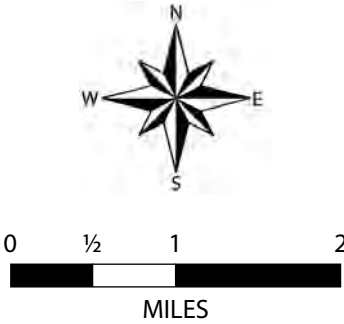


Source: Southwest Michigan Planning Commission

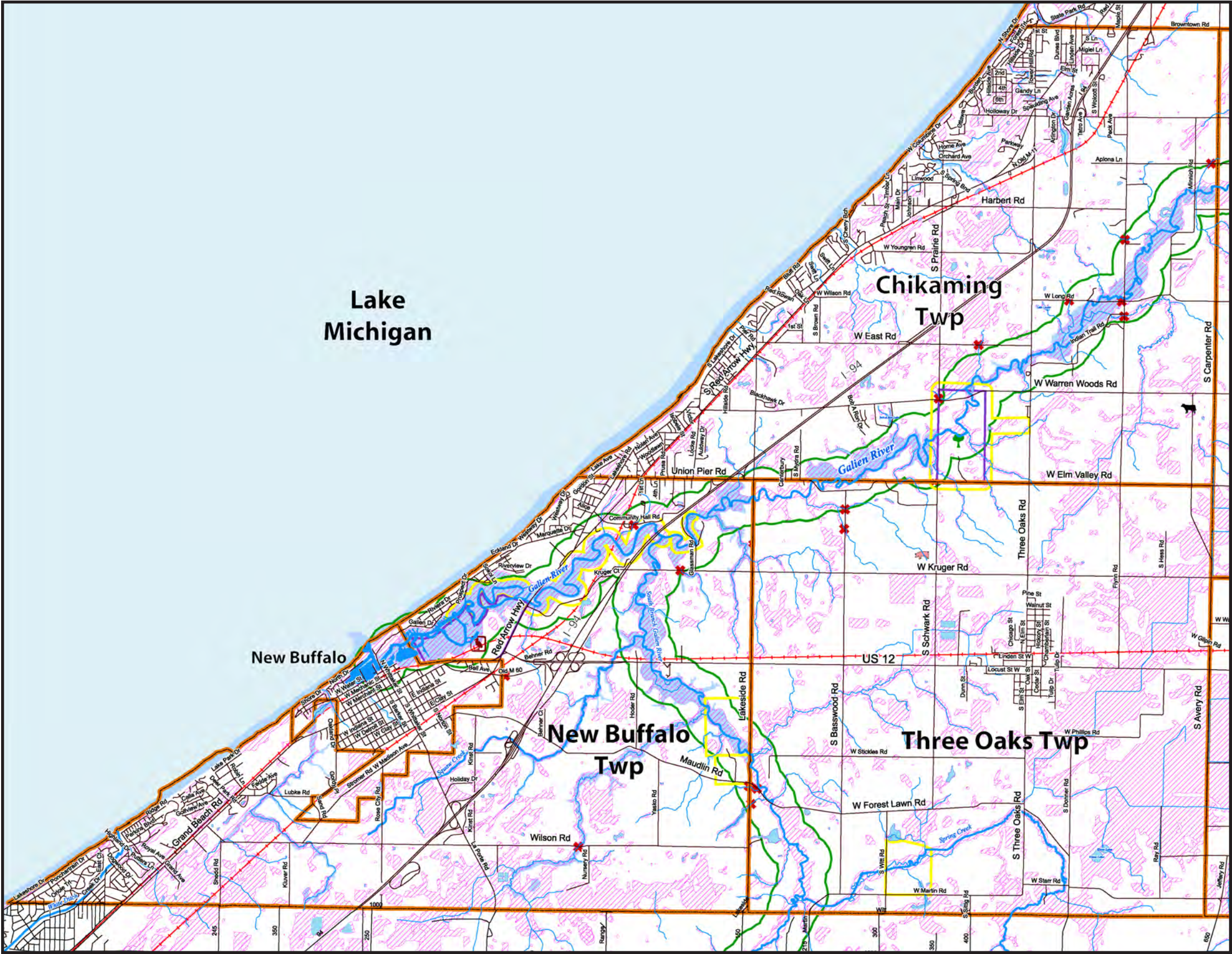


LEGEND

-  Township Boundary
-  No Data
-  Slope 0-2%
-  Slope 0-6%
-  Slope 6-18%
-  Slope >18%

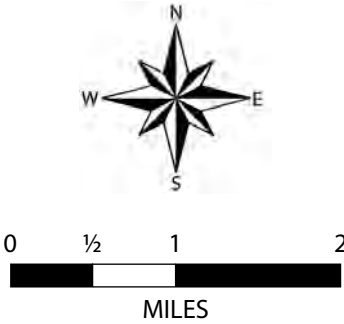


Source: Southwest Michigan Planning Commission

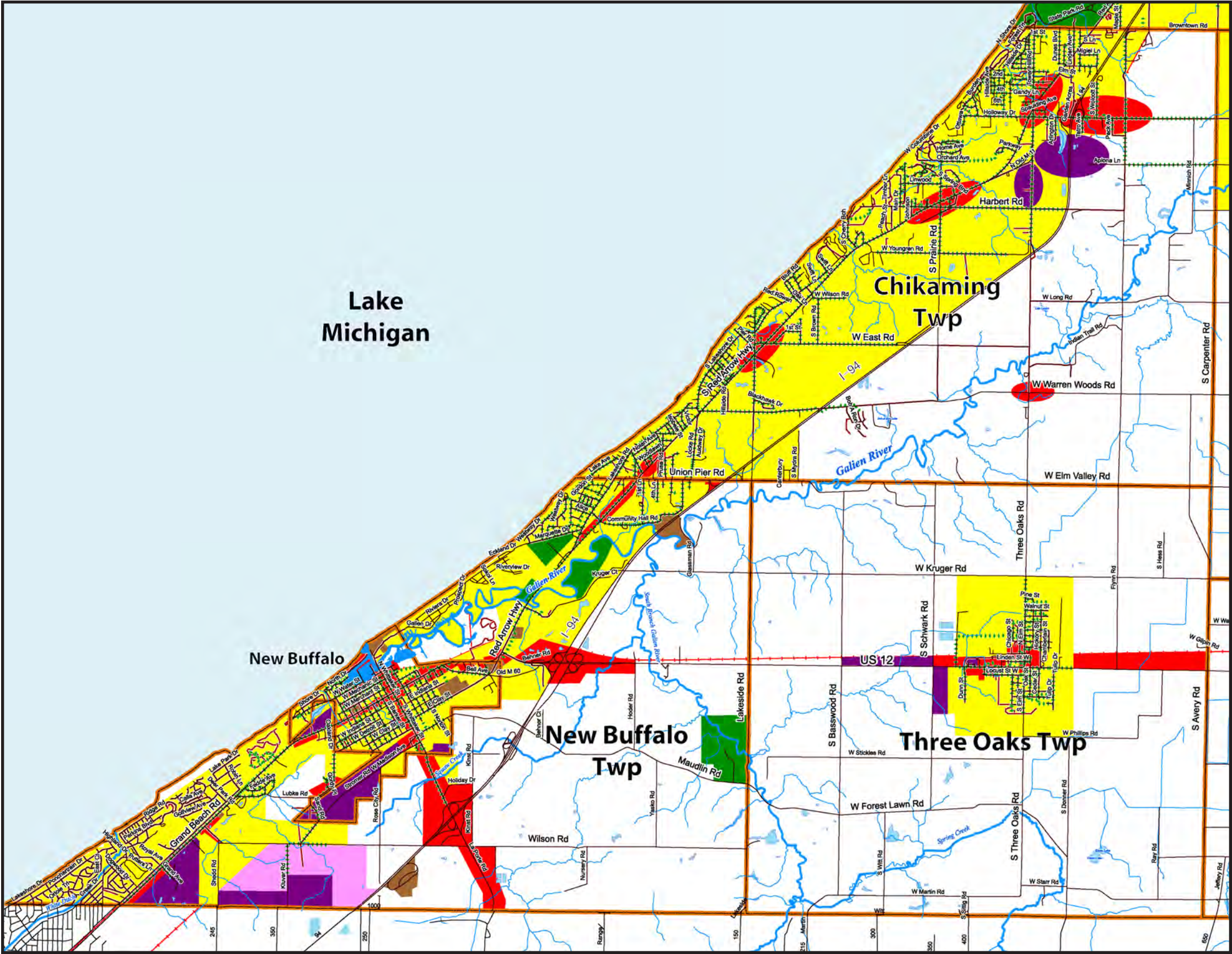


LEGEND

- Livestock:**
- Dairy
 - Hog
 - Road/Stream Crossings with Severe Erosion
 - Floodplain
 - Wetland
 - Riparian Corridor
- Preservation Areas:**
- Current
 - Recommended
 - County and Chikaming Open Lands
 - Warren Woods State Park
 - Township Boundary

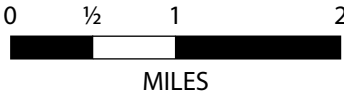


Source: Southwest Michigan Planning Commission

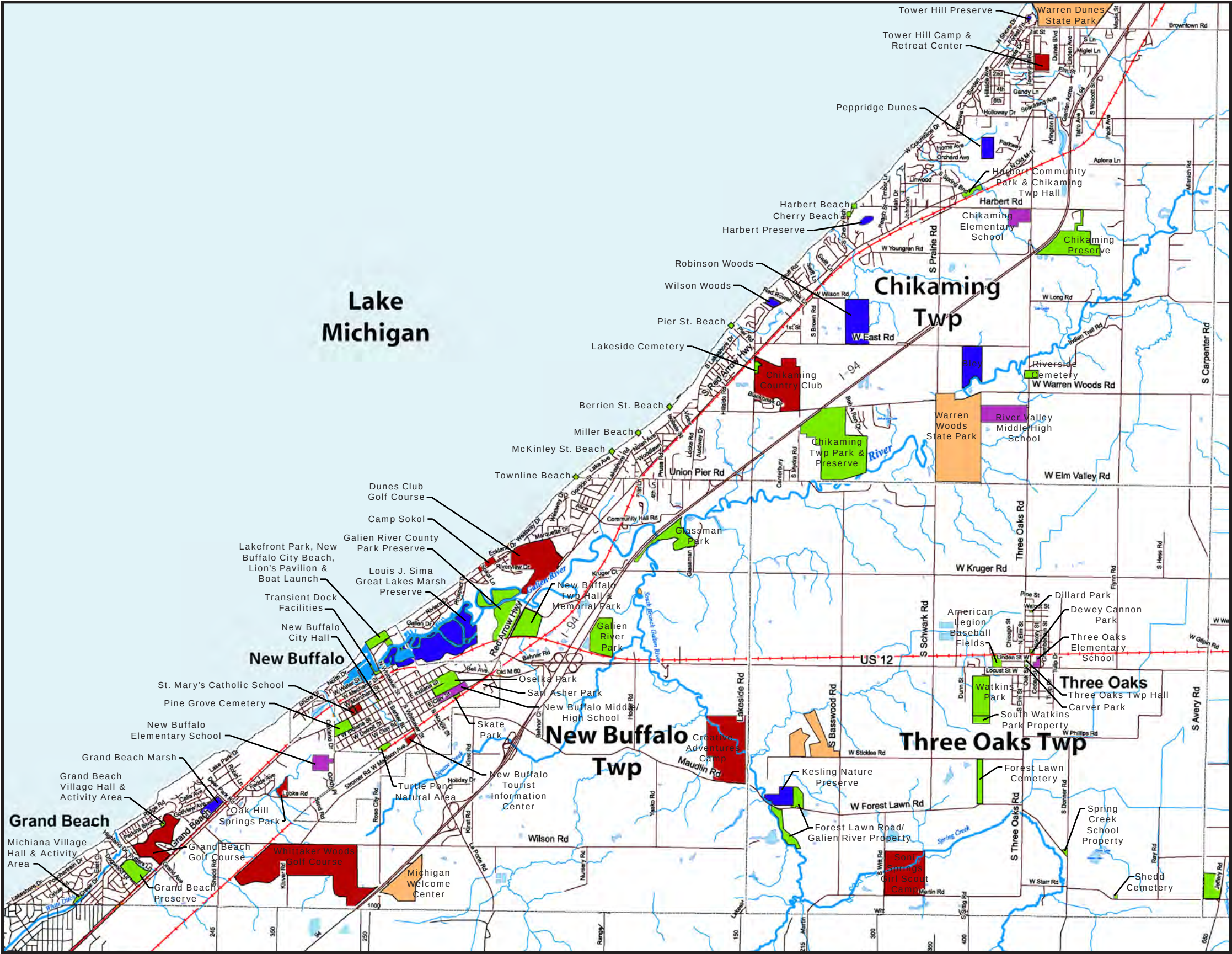


LEGEND

- Township Boundary
- Sewer
- Water
- Residential
- Commercial
- Industrial
- Public/Semi-Public
- Planned Unit Development
- Recreational
- Agricultural/Vacant



Source: Southwest Michigan Planning Commission



Township Boundary

State Land

Township/Local Land

Private Land

Public Schools

NGO Conservation Land

0

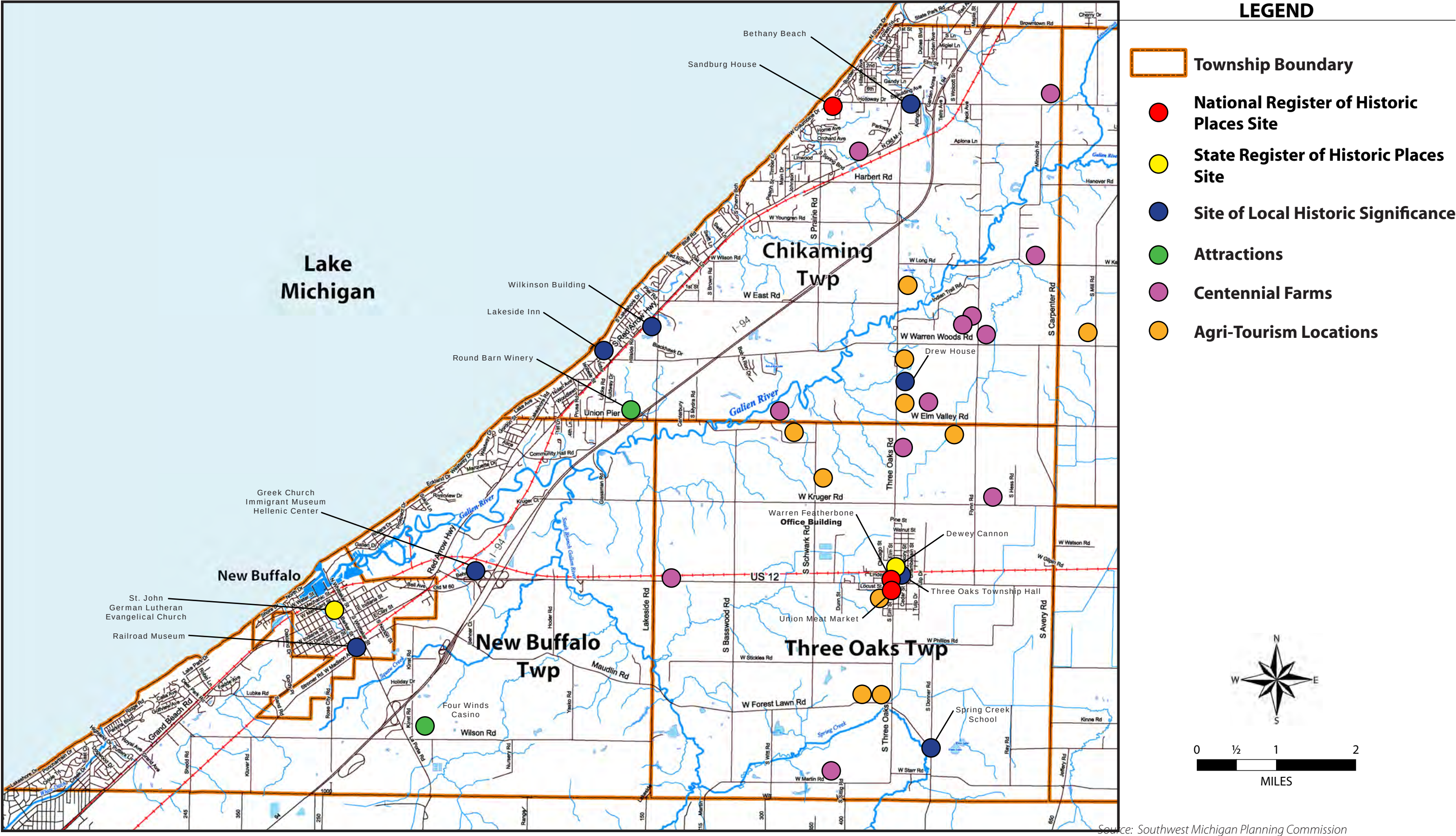
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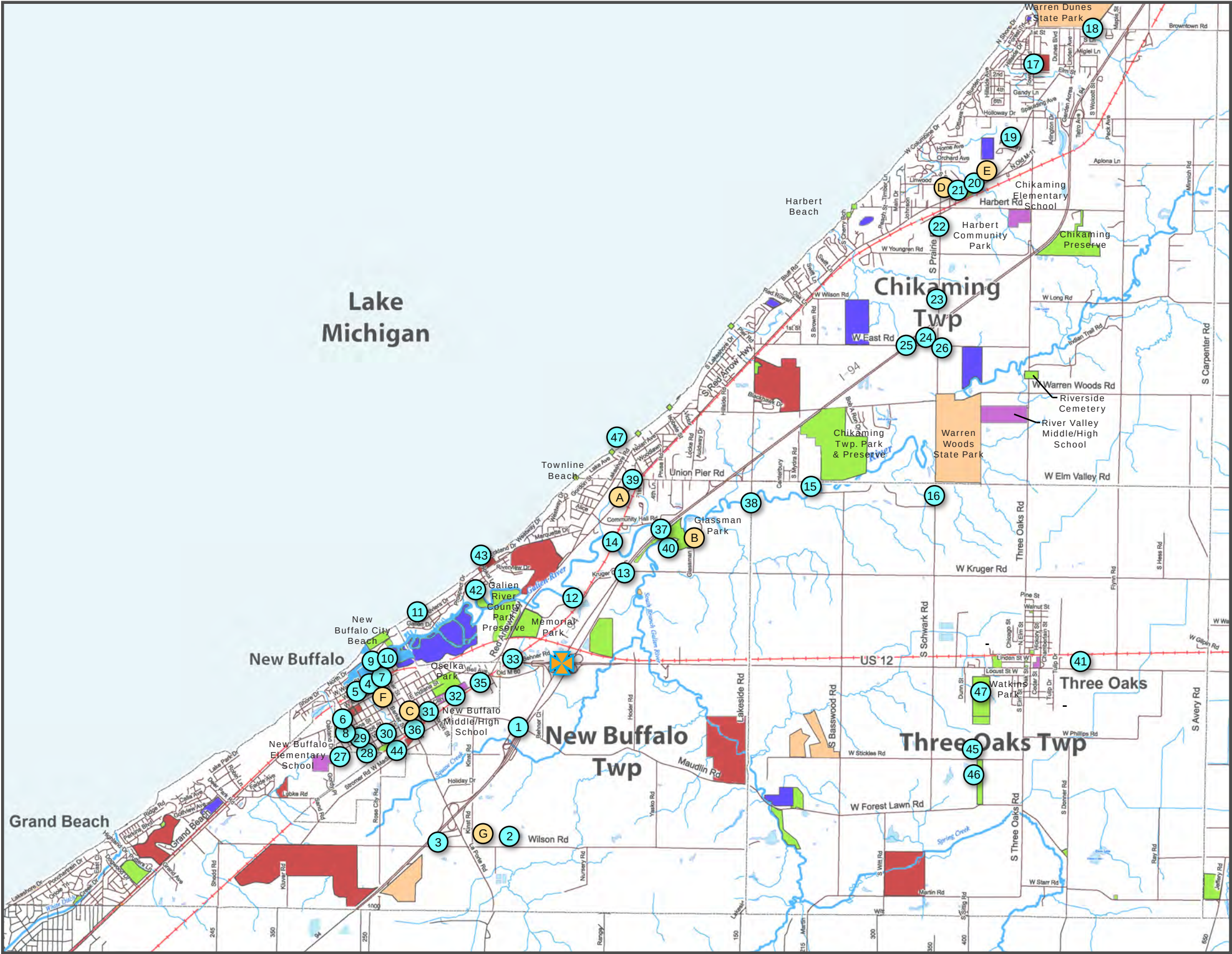
2

MILES

HISTORIC SITES & ATTRACTIONS



PHOTOGRAPH LOCATION MAP



LEGEND

- Township Boundary
- State Land
- Township/Local Land
- Private Land
- Public Schools
- NGO Conservation Land
- Photo Number
- Photo Letter





A Red Arrow Character @ Union Pier



B Glassman Park



C Whittaker Character south of Buffalo



D Red Arrow - Herbert Character



E Along Red Arrow - Herbert Character



F New Buffalo Character along Buffalo



G Casino @ Wilson



1 Maudlin @ 1-94 looking east



2 Wilson looking east, east of LaPorte



3 Wilson @ I-94 looking west



4 Mechanic Street looking east



5 Mechanic looking west



6 Buffalo looking north @ Cemetery



7 Whittaker @ railroad looking south



8 Cemetery looking north to Buffalo



9 Whittaker @ River



10 Under Whittaker Bridge looking west



11 Riviera looking north



12 Kruger @ railroad



13 Kruger @ 1-94



14 River @ railroad



15 River @ Elm Valley



16 Schwark looking south from Elm Valley



17 Tower Hill looking south



18 Browntown West of Red Arrow Hwy looking east



19 Red Arrow Near Parkway



20 Red Arrow Across from Harbert Park looking south



21 Red Arrow Across from Harbert Park 2 looking south



22 Prairie looking south



23 Prairie looking south near creek



24 I-94 along Prairie



25 East at I-94 Bridge



26 East looking north at Prairie alignment, just south of I-94



27 Lubke near New Buffalo Elem looking east



28 Clay looking west @ Eagle



29 Eagle between Detroit and Clay



30 Clay looking east toward Whittaker



31 Clay looking east toward High Sschool



32 Clay looking east @ High School



33 US-12 @ railroad looking west



34 US-12 @ I-94 looking east



35 Private drive across railroad just east of High School on Clay



36 Whittaker looking south @ railroad



37 River @ I-94



38 Lakeside @ River



39 Red Arrow @ Townline looking north



40 River @ I-94 looking east



41 US-12 East of Three Oaks looking east



42 Sturgeon Beach Private Community



43 Camp Sokol



44 Turtle Pond Park



45 Stickles looking north toward Watkins Park



46 Stickles looking south to Cemetery

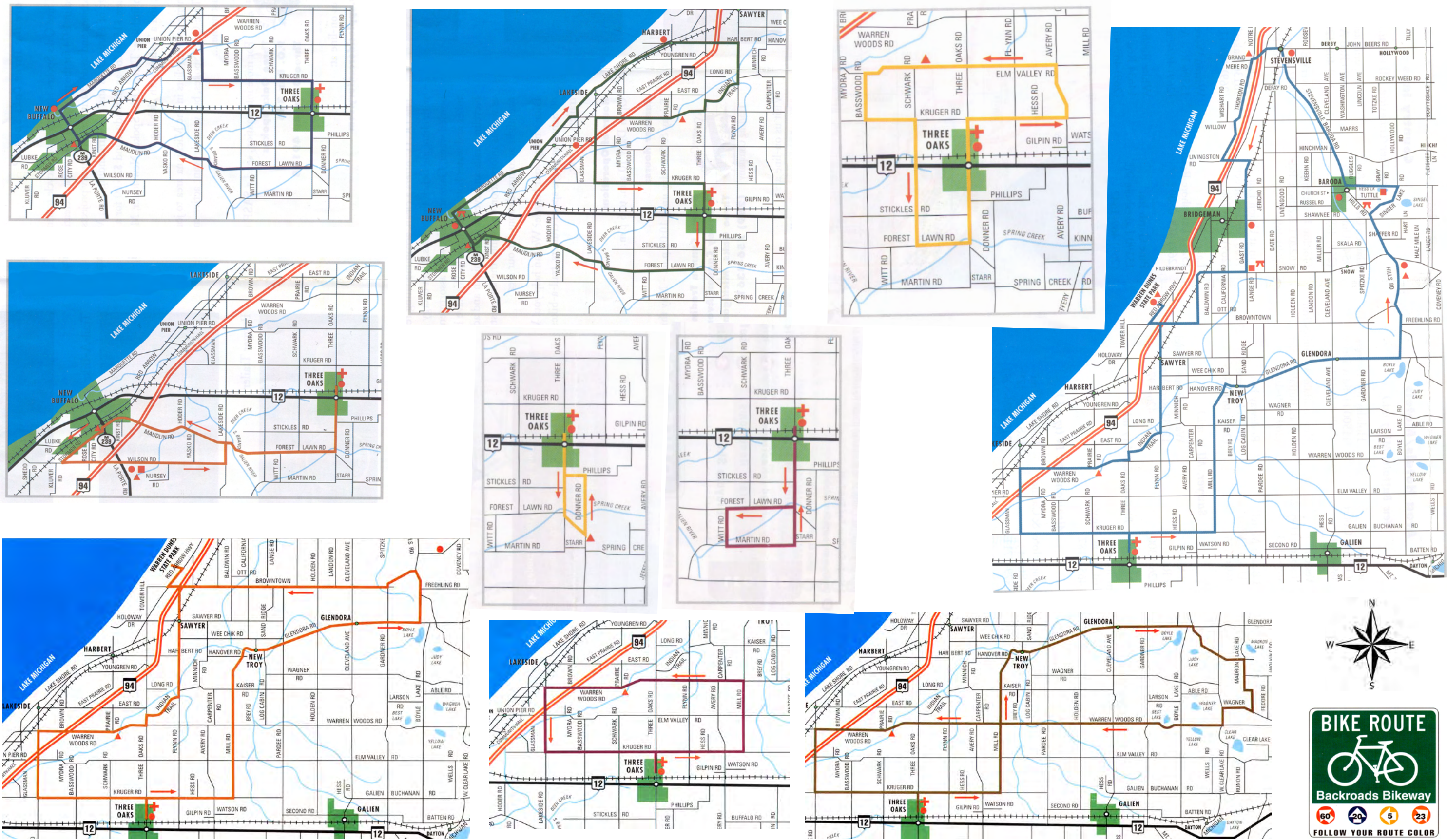


47 Watkins Park

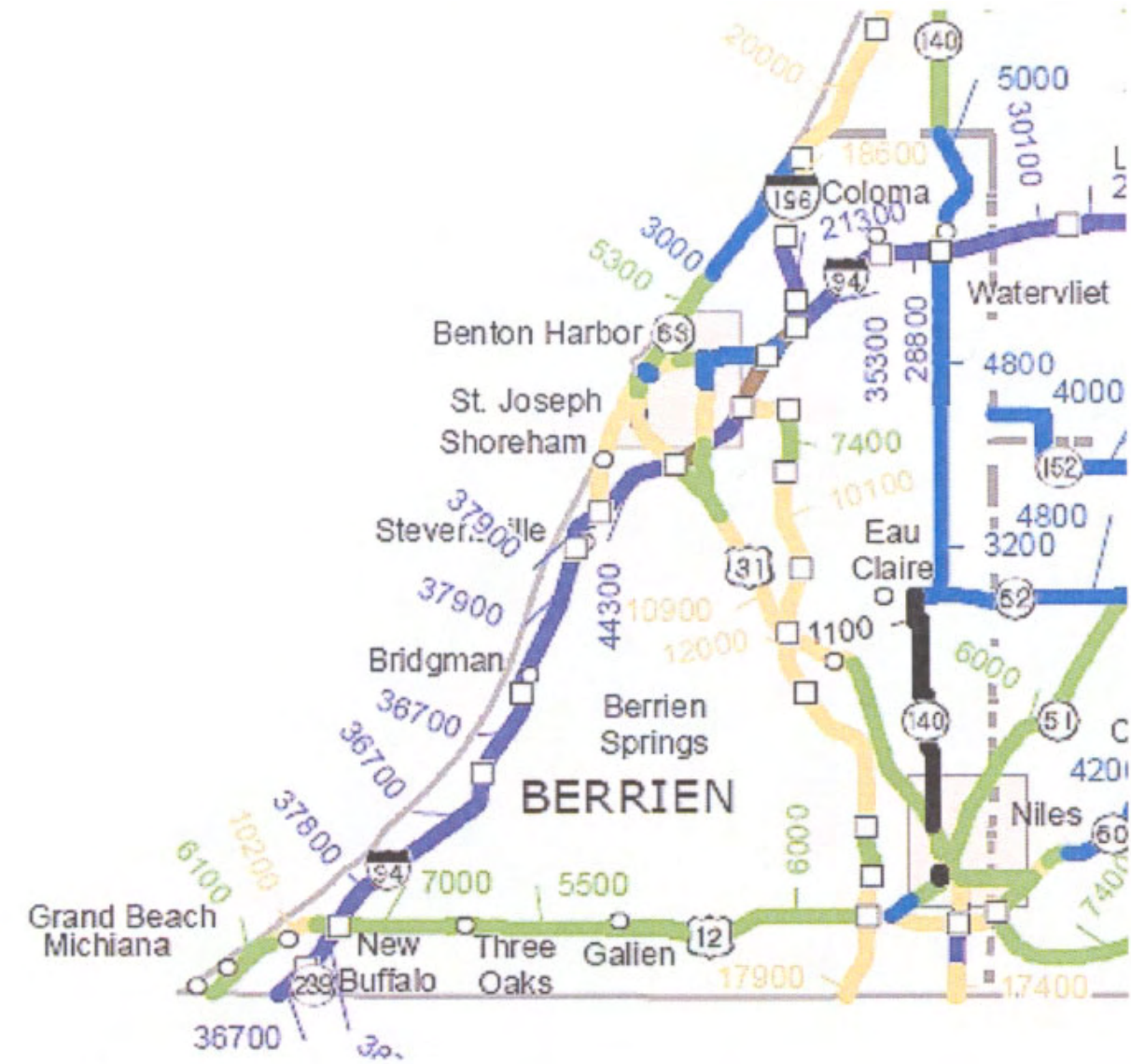


48 Beach Access

EXISTING BIKE ROUTES (SHARED ROADWAYS)



MDOT



Berrien County Road Commission

